American Gas Association MONTHLY

Gas Industry Advances in '43

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Life Savers for Our Flyers

•

Post-War Employment Problem

•

Tomorrow's Gas Range on Tap

•

Use of Gas in Military Posts

January 1944

VOLUME XXVI NUMBER 1

"... and you'll just wave your hand and make any climate you wish..."

WOULDN'T it be heavenly to live in a house that makes its own weather... that's balmy in January, cool as a mountain top in July... regardless of what the thermometer says outdoors?

ALL THIS WILL BE A REALITY! For tomorrow your new Gas air-conditioning system will give you "weather as you want it" at the flip of a finger.

But climate control is just one of the wonders of comfort being developed in the laboratories of the Gas industry today. Here are some of the other things in store for you.

TOMORROW'S MIRACLE KITCHEN ... so cool, so clean, you'll love every minute you're in it... where a new Certified Performance Gas range gives you speed in precision cooking — saves food values and hours of work!

NEW MAGIC IN REFRIGERATION ... a silent Gas refrigerator with cooling units that will keep all kinds of food fresh longer — meats, vegetables, even frozen foods. Will save you hours of marketing time!

A "HOT SPRING" ON TAP ... an automatic Gas water-heating system that will provide hot water galore... effortlessly, economically... make all housekeeping easier.

These are just a few of the wonders that will be brought to you tomorrow by the tiny blue Gas flame... *the flame that cools as well as heats.*

You can speed that day by using Gas wisely... by conserving it for vital war production ... and by saving for that magic home of the future with every war bond you can buy.

THE MAGIC FLAME THAT WILL BRIGHTEN YOUR FUTURE

GAS

An advertisement of the American Gas Association

American Gas Association MONTHLY

CONTENTS FOR JANUARY 1944

The gas industry in the war year 1943 made remarkable progress. This progress, set forth by President Acker in impressive and straightforward prose, will warm the heart of the gas man. . . . Not the least of the industry's achievements is the A. G. A. laboratory's ingenuity and resourcefulness in turning its skill and experience to the manufacture of oxygen regulators and other materiel vital to our flying fighters. Both war and navy departments have put their stamp of approval on this example of American enterprise. Mr. Conner's story is a war story of the first order. . . . When the guns cease firing, no problem will be more pressing nor more important than the re-employment of men serving in the Armed Forces. The gas industry is studying this problem and Mr. Peterson presents the first report. . . . Tomorrow's gas range isn't going to be so radically different as many post-war prognosticators think. Chicago housewives have, in effect, brought some of the more fantastic post-war planners back to earth. Mr. Mettenet's report is good reading. . . . Many other articles in this issue are well worthy of comment but space is lacking. . . . Happy New Year!

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General view of Ouachita River crossing of 18-inch natural gas pipe line near Arkadelphia, Arkansas. The pipe shown is one of several 10-inch lines crossing the river and connected to the 18-inch line with headers and gates on the banks. This MONTHLY prize-winning picture was taken by J. E. Hampson, Arkansas Louisiana Gas Company.

American Gas Association MONTHLY

JAMES M. BEALL, *Editor*

GAS ADVANCES
...1943 Year of Marked Achievement Despite War

By ERNEST R. ACKER
President, American Gas Association

DESPITE severe shortages of materials and manpower, the gas industry rates 1943 as a year of marked achievement. While essential civilian services in the home and elsewhere were maintained, facilities were expanded to increase the output of gas fuel needed by industry to meet every requirement of the war emergency without curtailment of supply.

At the end of 1943, 19,450,000 customers, the largest number ever connected to the mains of the industry, were being served with gas. This was an increase of 1.9 per cent over the year 1942. Of this total, manufactured and mixed gas companies were serving 10,696,000 customers while 8,754,000 were served by natural gas companies.

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Revenues of the entire industry, both manufactured and natural, aggregated $1,071,850,000, an increase of 7.8 per cent over 1942. Natural gas companies grossed $633,195,000, a gain of 8.5 per cent, whereas manufactured gas companies grossed $438,655,000, or 6.8 per cent more than for 1942.

Industrial sales of natural gas registered an increase of 113,558,000,000 cubic feet during the year, bringing total sales for 1943 to 1,019,617,000,000 cubic feet. This was a percentage increase of 12.5. Sales of manufactured gas for industrial purposes were 116,968,000,000 cubic feet, or 24.1 per cent greater than for the previous year.

In the household uses of gas, such as cooking, refrigeration, house heating, water heating, etc., manufactured gas companies sold 303,682,000,000 cubic feet, a gain of 7.1 per cent. Gas consumed for house heating registered an increase of 12.2 per cent. Sales of natural gas for domestic uses registered an increase of 6.1 per cent, or 505,488,000,000 cubic feet.

Indications are that the total production of natural gas in 1943, including amounts used in the manufacture of carbon black and for field purposes, will reach approximately three and one quarter trillion cubic feet. During the year, 294,683,000,000 cubic feet of natural gas were used as fuel for generating electric power. This was an increase of 61,916,000,000 cubic feet, or 26.6 per cent over the preceding year.

Gas Fuel Conservation

In addition to the question of basic supply, the gas industry has shown an outstanding ability to adjust its operations, personnel and economics to war conditions. It has accepted necessary governmental limitations and restrictions in good faith and has carried its full share for the responsibility of the conservation of critical resources.

The National Seven-Point Conservation Program represents at this time one of the most vital and far-reaching factors in the industry's relationship to the conduct of the war. The initiation of this new program finds the gas industry fully qualified by experience and past performance to give effective support to it.

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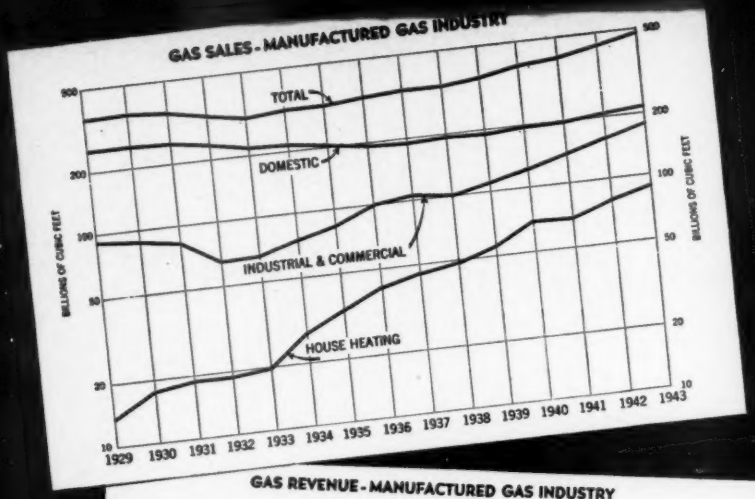
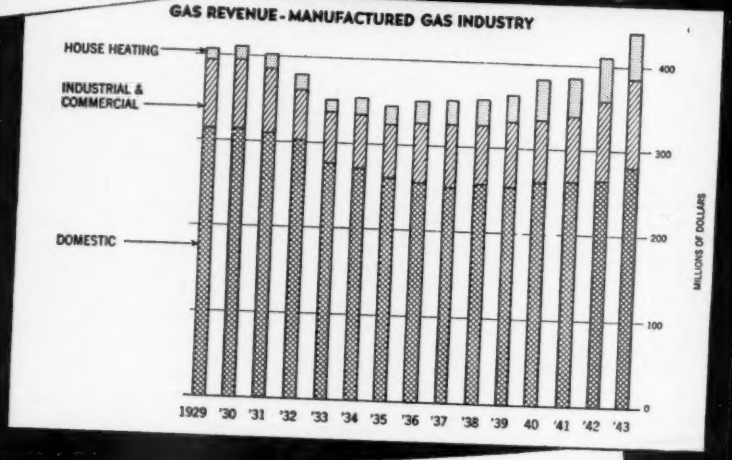
The oil conservation program undertaken by the industry last winter and during the spring of this year made a substantial contribution to the oil situation and was recognized by governmental agencies as an outstanding industry accomplishment. The approval of the industry's conservation efforts was largely responsible for the avoidance of more drastic alternatives such as the proposed substitution of gasoline for light and heavy oils in water gas production.

Research Laboratories Busy

"More of everything" summarizes the activities of the Testing and Research Laboratories of the American Gas Association during 1943, by far the busiest year in its history, with emphasis placed upon its work in the war field.


GAS SALES - MANUFACTURED GAS INDUSTRY
TOTAL
DOMESTIC
INDUSTRIAL & COMMERCIAL
HOUSE HEATING
BILLIONS OF CUBIC FEET
1929 1930 1931 1932 1933 1934 1935 1936 1937 1938 1939 1940 1941 1942 1943


GAS REVENUE - MANUFACTURED GAS INDUSTRY
HOUSE HEATING
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MILLIONS OF DOLLARS
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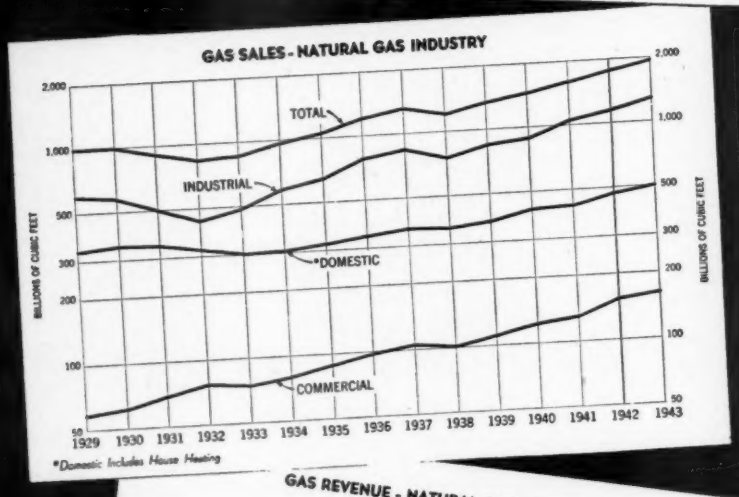
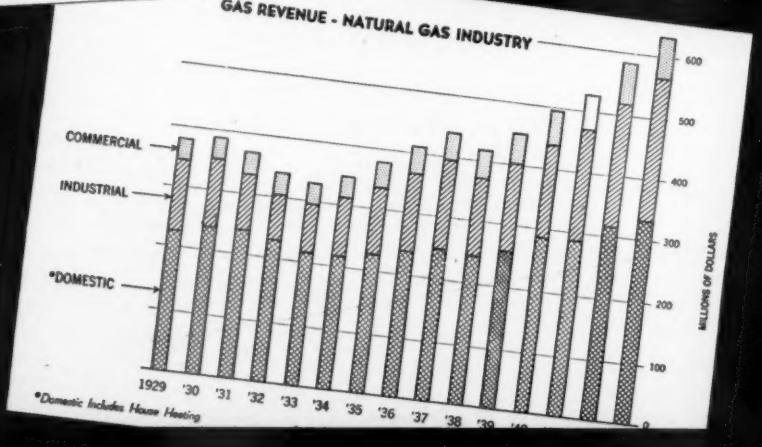

GAS SALES - NATURAL GAS INDUSTRY
TOTAL
INDUSTRIAL
*DOMESTIC
COMMERCIAL
BILLIONS OF CUBIC FEET
1929 1930 1931 1932 1933 1934 1935 1936 1937 1938 1939 1940 1941 1942 1943
*Domestic Includes House Heating



Conduct of war work and increased research assignments made it necessary to augment the Laboratories' staff by 125%. Some 14 separate and distinct devices of vital importance to the war effort were developed directly for various branches of the War Department, several of which are in production and others in the test period.

While most of these devices are of a highly confidential nature, it can be revealed that the Laboratories are providing 25,000 automatic oxygen regulators as a safeguard for our flying fighters at high altitudes and an oxygen therapeutic set for the air transport of sick and wounded personnel. Early large-scale production is anticipated on several additional regulating devices developed and supplied for experimental purposes. All these devices are related to the indication, regulation, or detection of gases.

Until the war is won, the greater part of the operations of the Laboratories will undoubtedly continue to be devoted to direct war work. Considerable additional war work is expected, involving equipment developed by the Laboratory staffs.

Domestic Gas Research Up 400%

In addition, the Laboratories are engaged in the most extensive research activities in their history, the program of domestic gas research having been accelerated by 400% in 1943. This is intended to aid in the development and improvement of equipment to be manufactured in the post-war period in order that the public will be supplied with new types of appliances incorporating the latest features of design and the most effective means of fuel utilization.

For example, such features as complete automatic ignition of all burners, faster radiant broiling, cooler exterior oven surfaces, better visibility in ovens, smaller, lighter and more efficient burners are all well within reach and similar improvements are projected for other gas equipment.

Expansion of the educational, research and library services of the Institute of Gas Technology at Illinois Institute of Technology, brought the annual budget to approximately $200,000. After two years of existence, the Gas Institute now has a fellowship group of 21 post-graduate students

training for specialized technical service in the gas industry. There are in addition, a number of research projects under way for various gas utility companies as well as several long-range fundamental research programs established for the general benefit of the gas industry at large.

Natural Gas Expands

Evidencing a solid front in support of the war program, this branch of the industry has demonstrated that it is sufficiently flexible to meet requirements of a growing market despite a multiplicity of shortages in both men and materials.

The essential needs of eight and three quarter million homes and business establishments were met, together with a substantial portion of the gas fuel requirements of almost two million additional customers who use mixed gas. An ever-increasing quantity of natural gas was furnished for use in war manufacturing processes—up to perhaps 70% of the total volume of natural gas delivered during the year to customers, exclusive of field use.

Many pipe line companies selling gas to large volume consumers on an interruptible basis increased their annual output without the use of new critical materials in any substantial quantity.

During the year the need of additional transmission facilities resulted in Washington approval of the construction of several important lines. These include 120 miles of 20-inch line of The East Ohio Gas Company which will supplement with 50,000,000 cubic feet a day the supply available to the congested centers of the Cleveland area and the Cities Service Transportation and Chemical Company line of 231 miles of 26-inch pipe which will increase supplies in Kansas and Missouri.

In addition, authorization has been given to the Tennessee Gas & Transmission Company to build 1200 miles of line from Driscoll, Texas, to West Virginia. This increase in supply will be of tremendous advantage to the Appalachian area whose local supplies have been strained because of the unprecedented demand in that region by war industries and by domestic customers having a priority status.

MANUFACTURED GAS INDUSTRY*

	1943	1942	Per Cent Change
CUSTOMERS			
Domestic	9,838,000	9,722,000	+ 1.2
House Heating	419,000	396,000	+ 5.8
Commercial	395,000	407,000	— 2.9
Industrial	34,000	34,000	0.0
Miscellaneous	10,000	10,000	——
Total	10,696,000	10,569,000	+ 1.2
GAS SALES (MCF)			
Domestic	214,941,000	204,511,000	+ 5.1
House Heating	88,741,000	79,092,000	+12.2
Commercial	57,086,000	59,034,000	— 3.3
Industrial	116,968,000	94,261,000	+24.1
Miscellaneous	4,036,000	3,479,000	——
Total	481,772,000	440,377,000	+ 9.4
REVENUE (Dollars)			
Domestic	$279,787,000	$266,972,000	+ 4.8
House Heating	57,108,000	51,218,000	+11.5
Commercial	49,606,000	50,413,000	— 1.6
Industrial	49,854,000	40,111,000	+24.3
Miscellaneous	2,300,000	2,012,000	——
Total	$438,655,000	$410,726,000	+ 6.8

Preliminary estimates by the Statistical Department, American Gas Association.

Wartime evolution of the use of natural gas hydrocarbons in industries that are clearly separate and apart from the production, transmission and distribution of natural gas for fuel uses, holds out great promise for the future.

Skilled research chemists have shown that it is possible to rearrange the molecular structure of natural gas hydrocarbons in a multitude of new ways and bring forth dozens of end products that include a variety of solvents, plastics, explosives, synthetic rubber and aviation gasoline.

During the year notable advance has been made in the integration of natural gas facilities, the development of underground storage and the liquefaction of natural gas to provide increased storage in a minimum of space against winter peaks.

Industrial Gas

Although the war production program launched the greatest industrial

NATURAL GAS INDUSTRY*

	1943	1942	Per Cent Change
CUSTOMERS			
Domestic (Incl. House Heating)	8,118,000	7,893,000	+ 2.9
Commercial	584,000	572,000	+ 2.1
Industrial	52,000	51,000	+ 2.0
Total	8,754,000	8,516,000	+ 2.8
GAS SALES (MCF)			
Domestic (Incl. House Heating)	505,488,000	476,426,000	+ 6.1
Commercial	163,699,000	152,562,000	+ 7.3
Industrial	1,019,617,000	906,059,000	+12.5
Electric Generation	294,683,000	232,767,000	+26.6
Total Industrial and Elec. Gen.	*1,314,300,000*	*1,138,826,000*	*+15.4*
Total	1,983,487,000	1,767,814,000	+12.2
REVENUE (Dollars)			
Domestic (Incl. House Heating)	$330,702,000	$315,255,000	+ 4.9
Commercial	66,675,000	64,545,000	+ 3.3
Industrial & Electric Gen.	235,818,000	203,790,000	+15.7
Total	$633,195,000	$583,590,000	+ 8.5

* Preliminary estimates by the Statistical Department, American Gas Association.

COMBINED GAS INDUSTRY*

	1943	1942	Per Cent Change
CUSTOMERS			
Domestic (Incl. House Heating)	18,375,000	18,011,000	+ 2.0
Commercial	979,000	979,000	0.0
Industrial	96,000	95,000	+ 1.1
Total	19,450,000	19,085,000	+ 1.9
GAS SALES (MCF)			
Domestic (Incl. House Heating)	809,170,000	760,029,000	+ 6.5
Commercial	220,785,000	211,596,000	+ 4.3
Industrial	1,435,304,000	1,236,566,000	+16.1
Total	2,465,259,000	2,208,191,000	+11.6
REVENUE (Dollars)			
Domestic (Incl. House Heating)	$ 667,597,000	$633,445,000	+ 5.4
Commercial	116,281,000	114,958,000	+ 1.2
Industrial	287,972,000	245,913,000	+17.1
Total	$1,071,850,000	$994,316,000	+ 7.8

* Preliminary estimates by the Statistical Department, American Gas Association.

heating revolution ever experienced, the peak of factory expansion and new factory construction required by the gas industry was passed in 1943, and the program nears completion. Unprecedented quantities of modern, efficient industrial gas equipment were installed during this period, and older gas equipment was revamped in order to turn out new war products. Upon these industrial gas furnaces, ovens and other apparatus depends the superior quality of the vitally important parts of practically every implement of war fabricated in the United States.

The industrial gas loads that keep these war furnaces running day and night are the largest ever provided by the gas industry and, together with still further modernized and improved industrial gas equipment, will be the foundation for large and important industrial gas loads after the war.

Probably the most significant progress of the year was made in radiant gas heat and its application to baking, curing and drying operations. The brightest future in processing appears to be opening up to methods which permit more rapid heat transfer, reduction in space for equipment, more precision in control, and a reduction in capital investment in equipment—promising ever-widening usefulness for radiant gas burners. This gives gas a lead position in the realm of chemistry and plastics; there are great possibilities in the food dehydration industry, in textiles, in steel, ceramics and in china. Today, radiant gas-fired heat-treating furnaces and china-firing kilns are being operated at temperatures of 2400 degrees F.

The gas used for radiant combustion may be in any of the commercial forms—natural, manufactured, mixed, or liquefied petroleum gases, but the burners must be designed both for the particular type of gas, as well as for the particular application.

Illustrative of the flexibility of gas fuel is the unique application of natural gas in the production of magnesium, because of the opposite role it plays; it is used in the carbonthermic processes as a shock chilling agent, bringing the temperature down to 395 degrees F.; and it is used in the ferrosilicon processes as a fuel to produce furnace temperatures of 2000 degrees F. upwards.

Several large plants in this country are utilizing these processes to produce the huge quantities of magnesium needed in airplane construction and in the production of supplies for the Ordnance Department.

Commercial Field

Immense quantities of new gas equipment were installed in 1943 for the purpose of feeding the Army, Navy and the Marines in their training period and in most of the permanent stations and bases at home. In addition, the great increase in meals eaten by war workers was, in most cases, taken care of with gas equipment.

Also, the upsurge in general civilian "eating out"—superinduced by the high points required for rationed meats and canned foods, taxed the capacity and durability of the gas equipment installed in hotels, restaurants, lunchrooms, night clubs and other eating places.

Home Service Contributes

Home service, the branch of the gas industry which represents the largest group of graduate home economists in a single industry in the world, is credited with making the year's major contribution of the industry to community life and national welfare under wartime conditions.

Complete cooperation and aid was given the governmental programs of nutrition in the home and in industry, conservation of foods, fuels and appliances, and the establishment of information bureaus to interpret and "sell" food rationing to the public. To this end, 12 million customer contacts were made by home service personnel within the year as a means of stimulating consumer acceptance of the government's requisite wartime programs on the Home Front.

Post-War Plans

Since it is granted generally that the transition from war to peace will be a difficult and complex period, plans are being made for the reconversion of the gas industry to a sound peacetime economy with the cessation of war, in order to reduce dislocations to a minimum, stabilize the industry through the period and have tested and approved household appliances ready for production as soon as factories can be reconverted.

Factors being appraised include character, scope, and methods of expanding markets, changes in purchasing power, development of new appliances and preparation for the resumption of sales activities.

The industry believes there are many fundamentals as to why it can best serve the domestic market; the quality of service rendered to the customer; the conservation of national resources; employment of labor; basic economics to the customer and to the company.

In appliances, the industry has ceased to think in terms of ranges, water heaters, and house heating equipment as separate units, but rather of the combined service where each

(Continued on page 48)

Life Savers for Our Flying Fighters

By R. M. CONNER

Director, American Gas Association Testing Laboratories

FOR some time prior to Pearl Harbor the American Gas Association's Laboratories operations had been devoted more and more to meeting the needs of our rapidly growing war effort. Previously directed principally to testing of domestic gas appliances for civilian purposes, cooking and heating demands of army camps, defense housing and similar projects had necessitated many new designs on which approval was demanded by government procurement agencies. Through the availability of approved models for these purposes, valuable time was gained in placing these developments in readiness for all-out war which was to follow.

Up to this time our Laboratories' contributions to the war effort, valuable as they were, may be regarded as of an indirect rather than a direct nature. Following Pearl Harbor, it rapidly became evident that united effort of all American industry would be needed in providing equipment urgently required by our armed forces on land, on sea and in the air—all other activities being necessarily subordinated to this end. Since so much of the material needed was of a highly specialized nature, requiring the services of skilled technicians for research and development, the possibilities afforded for effective use of our trained staff and special facilities was thoroughly evident. Realizing the increasing emphasis which modern warfare places on development of new products and instruments and knowing the Laboratories extensive experiences along experimental and research lines, it was confidently believed they could best be used in this way.

After many contacts with the War and Navy Departments, Office of Scientific Research and Development, Office of Production Management, National Defense Research Committee, and National Advisory Committee for Aeronautics, to mention only a few, authority was given to the Laboratories to design and develop certain types of instruments for use in airplanes. This was followed by highly confidential

Fig. 2. General view of regulator test room

Fig. 1. A-11 Automatic oxygen regulator

research assignments primarily connected with ordnance. To date some fourteen different projects have been handled by the Laboratories for these various agencies. A major part of their facilities and personnel have, as a consequence, been devoted to direct war work of a most important nature.

Less than one and a half years ago the United States Army Air Forces advised the Laboratories that they were in real need of a regulator that would automatically supply oxygen to flying personnel in the amount required as an airplane gained altitude. Existing oxygen regulating equipment, it seemed, was primarily designed for individual use and could not be readily modified to provide the necessary protection to an entire crew or to a full complement of paratroopers or other personnel.

Conversion to War Work

It can be appreciated that development of such a regulator represented a major assignment. Despite the fact that this was not exactly in the nature of the Laboratories' peacetime business, years of specialized training of their staff and experience gained in many different phases of the gas industry had ideally equipped them to meet this new and vital problem. Furthermore, we were fortunate in obtaining the assistance of E. G. Steffen, a capable engineer, formerly vice-president and production manager of the Titan Valve & Manufacturing Company. He later formed Alar Products, Inc., of which he is now president, for the inspection and assembly of this regulator as well as to cooperate in its further development.

Within a few months after the receipt of an order by Alar Products, Inc., for an experimental unit, delivery

Fig. 3. Regulator mounted on test bench

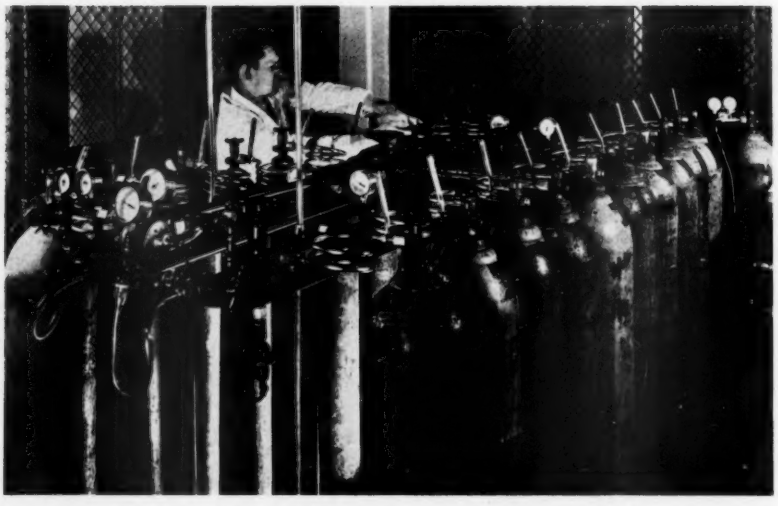


Fig. 4. Oxygen cylinders connected to supply manifold

was made to the Army Air Forces of a compact working model weighing only nine ounces and capable not only of supplying oxygen requirements for as many as fifteen men but also of compensating the flow for different altitudes. This device, moreover, met rigid tests devised by the War Department to assure safe and efficient performance under all operating conditions including frigid or torrid temperatures as well as excessive vibration to which it might be subjected in the field. This accomplishment was all the more remarkable since it was achieved in competition with other organizations whose daily business is the development and construction of equipment for the handling and control of compressed gases.

Development of the automatic oxygen regulator was far from being a simple matter. With only a rough idea of the results to be accomplished and with knowledge of its great need in modern warfare as a guide, our research engineers and scientists set to work. Technicalities of reducing the full pressure at which oxygen is customarily supplied in cylinders down to a point where it could be breathed comfortably had to be analyzed. Likewise, it was necessary to make provision for adequate flow as demanded by a full complement of personnel in a plane. In addition, a major problem was presented in working out an automatic actuating control which would operate positively and accurately without any manual aid through reduction in air pressure alone as an airplane gains altitude. Recognizing the urgency of making early delivery of these regulators, consideration was also given to ways and means of adapting them to mass production methods. Obviously, every intricate operation that could be eliminated or avoided meant that much time and manpower saved.

It is of interest to know that the ordinary oxygen regulator such as is commonly employed for oxygen-acetylene welding weighs on an average of ten to twelve pounds. It is usually constructed of heavy walled brass parts and fittings. The smallest oxygen regulator of which the author has knowledge weighs a little better than four pounds, being reduced in weight as a result of the brass shortage. These manually controlled regulators may be compared to the automatic oxygen regulator finally developed for the Army Air Forces which weighs only nine ounces. It may well be appreciated that this saving of nine and a half pounds in every regulator may be used effectively to increase a plane's ammunition load—a few more machine gun bullets for offensive action as well as for protection in combat.

Light Materials a Problem

As may be inferred from the light weight of this regulator, radically different materials than those formerly used for control of gases under high pressure are utilized in its construction. Indeed, determining the suitability of materials for this purpose was one of the major obstacles in the early stages of its development. As one example, a metallic container capable of holding liquids at atmospheric pressure may leak when used for storing a gas under high pressure. Here the metallurgists came to the fore, the final result being a light weight casting that is 100 per cent leakproof for the job it is intended to accomplish. Other instances might also be mentioned where new substitutes for scarce or critical materials were found and new applications made of other available materials. In spite of such difficulties however, through the ingenuity of Laboratories' engineers who would not take "no" for an answer, the A-11 automatic oxygen regulator was developed and presented to the Army

Air Forces for approval. It is illustrated in Fig. 1.

Although obliged to start from "scratch," the regulator was placed on a mass production basis in less than seven months after the Air Corps made its needs known. Production of parts and assembly was relegated to local companies whose facilities were particularly adapted for that type of work. The Laboratories, in addition to exercising general supervision and supplying engineering services, assumed responsibility for final testing and acceptance of each unit to assure its compliance with contract specifications. Years of experience in rendering testing and inspection services for the gas industry afforded an ideal background for maintaining the required high standard of the final product. In March the first shipment was made and deliveries have been increasing steadily since that time.

Every possible care and precaution must be taken in testing the safety and accuracy of operation of equipment on which the lives and welfare of our fighting men may depend. For this reason, special test apparatus capable of reproducing the most extreme conditions which an airplane might conceivably undergo over the entire world-wide battle front needed to be developed before final tests could proceed. Conversion of the Laboratories peacetime facilities to provide for their conduct represents in itself a commendable story of accomplishment.

Fig. 2 shows a general view of the testing room where final examination of each regulator is made before shipment. A closeup of one of the test benches showing a unit mounted for test is illustrated in Fig. 3. Numerous observations are made using this assembly to determine ability of the regulator to function within prescribed limits under various operating conditions. All are designed to simulate those to which the regulator may be subjected when installed in a fighter plane. Special provision for a high pressure oxygen supply as well as installation of a vacuum system were necessary to permit the conduct of the special tests required. The high pressure oxygen system is shown in Fig. 4 and the source of vacuum in Fig. 5.

To simulate high ambient temperatures, such as are encountered near the equator as well as the extreme cold of high altitudes, special test equipment was constructed and installed. It is illustrated in Fig. 6. Each regulator is required to function satisfactorily under the extremes of temperatures imposed. In addition, other apparatus not illustrated here was designed for the purpose of subjecting each regulator to conditions of extreme vibration such as might occur in actual flight and in combat. The wide variety of abnormal conditions imposed well illustrate the severity of the tests which

Fig. 7. (Top) Therapeutic oxygen set
Fig. 8. Pressure reduction regulator

Fig. 5. Vacuum pump and tank

Fig. 6. Cold and hot regulator test boxes

Commend A.G.A. Laboratories War Work

THE ARMY SAYS:

ARMY AIR FORCES, MATERIEL COMMAND
OFFICE OF THE COMMANDING GENERAL
Wright Field, Dayton, Ohio

3 November, 1943

American Gas Association Testing Laboratories,
Cleveland, Ohio
Attention: Mr. R. M. Conner
Director, Testing Laboratories.

Gentlemen:

The Materiel Command is pleased to take this opportunity to express its sincere appreciation for the cooperation your Organization has given in developing several items of oxygen equipment for use on aircraft. Records indicate that during the past year or so the following controls have been developed by your staff in collaboration with Materiel Command engineers and at the request of this Command:

Type A-11 continuous flow oxygen regulator (in conjunction with Alar Products of Cleveland, Ohio).

Oxygen Therapeutic set.

Modification of Type A-11 regulators to produce flow specified for the Type A-6-A oxygen regulator with automatic compensation for altitude.

Automatic line opening valve to supply oxygen to regulators at a predetermined altitude.

Electric signal pressure indicator for the A-11 regulator with automatic compensation for altitude.

Fuselage or wall mounting type pressure reduction regulator for low pressure oxygen systems.

Fuselage type pressure reduction regulator for high pressure oxygen systems.

High flow oxygen regulator with 300 liter per minute capacity.

Experimental models of each of the above mentioned controls were submitted for test and found to meet the specifications which were set forth for them. While changing requirements have in some instances obviated the need for several of these devices, your efforts on them are very much appreciated.

It is trusted that the Materiel Command may continue to have the valuable assistance of your Organization in this development work which is considered as vital to the war effort.

Very truly yours,

W. RANDOLPH LOVELACE, II
Lt. Colonel, Medical Corps.
Chief, Aero Medical Laboratory,
Engineering Division

THE NAVY SAYS:

NAVY DEPARTMENT, BUREAU OF ORDNANCE
WASHINGTON, D. C.

29 November, 1943

Mr. R. M. Conner, Director
American Gas Association
Testing Laboratories,
Cleveland, Ohio.

Dear Sir:

My tour of duty as Chief of the Bureau of Ordnance is now completed and on 1 December, I am being detached for sea service. During my tenure, the Bureau has been faced with the greatest task in its history—the installation of new and improved ordnance equipment aboard existing ships of the Fleet, the arming of tremendous numbers of new warships, naval aircraft, and merchant vessels of all types as well as the continued research, development, and production of new weapons to meet the demands of modern warfare.

The degree of success achieved is due to the splendid efforts put forth by you and other development and manufacturing organizations who have participated in the program of the Bureau of Ordnance.

I wish to take this means of thanking the members of your organization for their endeavors, loyalty, and whole-hearted cooperation.

Sincerely,

W. H. P. BLANDY
Rear Admiral, U. S. Navy
Chief of Bureau of Ordnance

are applied, all of which must be met satisfactorily to permit acceptance.

Under normal conditions the actual testing of these regulators would have presented no personnel problems. Long before production had reached the point where quantity testing was required, the supply of available scientists and particularly of graduate engineers had become acute. It was believed, however, that the work required was of such a nature that it could readily be performed by women possessing a scientific background after proper instructions and training had been given. By careful selection of qualified women and their intensive training by our engineers, a testing staff was built up which proved fully qualified to perform the exacting tests required. Remarkable aptitude was displayed by those engaged in these operations and too much credit cannot be given them for their accomplishments in this direction. For several months it was necessary to resort to shift work in order to utilize equipment to the maximum degree and to maintain the required schedule of deliveries.

Aids High Altitude Flying

Little imagination is required to realize what the availability of a thoroughly trustworthy automatic oxygen regulator means to the Army Air Forces. Shortly before the outbreak of the present war, flying at altitudes of 20,000 feet or higher was still in the experimental stages and attended by many hazards. Today high altitude flying is a "must" for both combat and transport planes. The fighter and crew that can climb above the foe possess a valuable advantage in combat while transport planes carrying airborne troops to the fighting fronts or conveying wounded to hospital bases are able to fly safely high above the reach of anti-aircraft fire. Successful flying at higher altitudes is vitally dependent on the use of oxygen. Without equipment automatically providing not only the proper supply needed but insuring its delivery under rapidly changing conditions of altitude, many of the accomplishments of our air forces would have been impossible.

The success which has attended our efforts in originally developing this automatic oxygen regulator and supplying it in quantity lots naturally led

to requests from the Army Air Forces to undertake the design and development of other devices of the same general nature. For over the past year and more, much work has been done along these lines in cooperation with its Materiel Command. Several successful applications have already been developed and others are now in progress.

A portable oxygen therapeutic set shown in Fig. 7 is worthy of special mention. A number have already been furnished and it is expected that they will prove most valuable in the air transport of sick and wounded personnel. This therapeutic set includes a small oxygen supply tank together with an automatic oxygen regulator and necessary attachments for ready application. The regulator itself includes special features, including that for compensation of altitude which have already been described. Possibilities for added comfort and well-being of the sick and wounded through the use of this new development can well be realized.

Pressure Reduction Regulator

Fig. 8 shows a pressure reduction regulator developed for controlling the oxygen pressure to individual masks. It is available in two types, one for use with high and the other with low pressure cylinders. Much work has also been done on another automatic regulator designed for special application and capable of providing a higher rate of oxygen flow. These represent merely a few of the highly specialized types of equipment for oxygen control on which research and development has been conducted for the Materiel Command. Other assignments cover indicating equipment of various types including instruments capable of indicating the concentration of various gases for airplane use.

All Laboratories' war activities have been carried on thus far at Cleveland. Following extensive studies which have been made on highly specialized equipment for use with ordnance, additional apparatus has been developed on which it is expected production will shortly be under way in the West Coast area. Our Los Angeles Laboratories will participate in the testing of the final product, thus enabling this branch to take an active part in our war operations. The greater portion of necessary engineering services will be provided through the Cleveland Laboratories as previously.

Our Laboratories take justifiable pride in their war activities and particularly for their part in development of the A-11 oxygen regulator and successful conduct of the extensive engineering and testing services attending its quantity production. When it is considered that these accomplishments have been brought about under wartime conditions, without disruption of normal operations, by an organization previously functioning along different lines, the results are all the more remarkable. Credit for what has been done is due the entire staff and Alar Products, Inc.

It is desired to extend special recognition to certain individuals whose contributions were outstanding. These include particularly W. R. Teller, chief engineer of our War Products Department, and E. G. Steffen, president of Alar Products, Inc., through whose joint efforts this regulator was developed and placed on a production basis. Not only have they made a most valuable contribution in the field of regulation of gases, but what is of far greater immediate importance at this time, they have materially aided our flyers in obtaining mastery of the air on the far-flung fighting fronts.

First A. G. A. Technical Conference on Domestic Gas Research

Everett J. Boothby, Chairman

ON Thursday and Friday, February 17 and 18, Cleveland, Ohio, will be the setting for an important gathering of engineering and other technical men from appliance and related equipment manufacturing companies, which will be known as American Gas Association Technical Conference on Domestic Gas Research, according to an announcement by Everett J. Boothby, chairman, Committee on Domestic Gas Research. An entirely new type of engineering conference within the gas industry, it was authorized by the Executive Board of the Association in order that the accumulation of fundamental research, both published and unpublished could be presented and analyzed to help speed its application in gas appliances of the future.

F. M. Banks, Vice-Chairman

The program of fundamental research conducted by the Association is an extensive one and, through the action and support of the Executive Board, has been greatly expanded during 1943. It is being still further expanded in 1944. The accumulation of technical material resulting from work done at the A. G. A. Laboratories is now the greatest of any time since the program began and ten technical bulletins have been published. The designers and other technicians of appliance manufacturing companies working with the Laboratories staff and members of the Technical Advisory Committees will, at this Conference, be able to bring themselves entirely up to date on the fundamental research that has been done and is now being done in combustion, heat distribution, ignition, venting, heat losses, speed, and related subjects.

Only subjects pertaining to the technical phases of domestic gas research will be considered at the Conference which will be held at Hotel Statler, with demonstrations at A. G. A. Testing Laboratories.

All manufacturers of gas appliances and related equipment will receive an invitation from the Committee on Domestic Gas Research to have their chief technical man in attendance, together with such technical assistants as they may designate. Officials of companies will also be in attendance as will interested technical men from gas utilities.

In order that West Coast manufacturers and utility engineers will be able to take full advantage of the fundamental domestic gas research that the American Gas Association has carried on, the Research Conference will be repeated on the Coast about a month after the Conference in Cleveland, at a time and place to be announced.

Naples Gas Restored

A MILLION Neapolitans are again cooking with gas. After six weeks of work on the city's gas producing and distributing system, badly damaged by bombs and German demolitions, Army engineers have restored service to the amazement of Italian engineers who had estimated the job would take six months.

Personnel Planning . . . *The Gas Industry Tackles the Post-War Re-Employment Problem*

Gordon M. Peterson

By THE SUBCOMMITTEE ON PERSONNEL PRACTICES
Gordon M. Peterson, *Chairman,* Public Service Electric and Gas Company, Newark, N. J.

•

W. E. Himsworth, The Brooklyn Union Gas Company, Brooklyn, N. Y.

•

R. I. Marshall, Electric Advisers, Inc., New York, N. Y.

A special subcommittee of the Association's Committee on Personnel Practices was appointed at the suggestion of the Post-War Planning Committee to study the questions relating to the re-employment of service men following Victory.

The present report of the subcommittee is in the nature of an interim report on this subject, to be followed by others as the work progresses.

PRIVATE enterprise is vitally interested in keeping men and women employed in the post-war period. A high level of national employment is the strongest practical insurance against continuance or extension of government controls. Relaxation of these controls will permit private enterprise to function more fully in building a sound, prosperous peace-time economy.

Attainment of this objective of sustained employment and high national income, is one of the purposes of the vast amount of research and planning now being carried on in the United States through various channels. From such studies are emerging new possibilities of employment, and programs for bridging the period of post-war adjustment. In the national picture as a whole, these developments will be of great significance. They will also affect in varying degree different types of industry, and different companies within a single industry. Obviously, for example, the post-war personnel problems in the munitions industry will be different from those in the gas industry. Within the latter, as an illustration of just one specific variable, a company that needs to expand its personnel after the war will be in quite a different position from one that contemplates a problem even in absorbing the employees who return from military service.

It is essential of course, that each employer follow closely any national developments bearing on his situation, and coordinate with them. But in addition he should also make concrete plans to cope with his specific problems, both as a matter of self-interest and also in furtherance of the national objective.

It was along this line that this committee, after preliminary study, concluded it could be of most practical service to the member companies of the Association. It therefore made a survey among a representative group of companies to bring into sharp focus the problems to be met, and the specific steps that could be taken in meeting them, with respect to the following:

1. Return of employees from the armed forces.
2. Release of employees hired for the war emergency.

Consideration of these problems, as is true of any post-war planning, involves the future. There is no *information* about the future—that is all assumption. But the more complete and up-to-date information one has about the present, the better assumptions, or estimates, he can make about the future. Consequently with respect to both parts of the post-war personnel problem listed above, the premise of the following discussion is that each company should keep up-to-date records, broken down into such operating groups as may be desirable for control and forecasting purposes, of the number of employees on leave for military service, and the number of employees who were hired temporarily to fill their places.

Returning Employees

To cope most effectively with problems that will arise in connection with return of employees from the armed forces, the following steps are recommended:

1. Maintain an estimate of the number expected to return to the company's employ.
2. Formulate a company policy with respect to reinstatement of employees who return physically handicapped.
3. Plan to assist (particularly in cooperation with veterans' rehabilitation agencies) physically handicapped employees reinstated, in overcoming their handicaps or developing new proficiencies.
4. Recognize that even though no physical impairment has occurred, readjustment may be difficult; develop plans for assisting the individual employee in such adjustment.
5. Plan to provide any retraining that may be necessary because of changes in the work to which such employees will be assigned.

An estimate of the number of employees who are expected to apply for reinstatement is essential in order to furnish to management a picture of the extent of the problem. Such estimate, based on up-to-date records of numbers in service, should reflect probable casualties, failure of men to return from personal choice, prospective schedule of military discharge after the war, and similar factors, revised

periodically in the light of the best information available at the time. Also, if because of changes in operations certain jobs will no longer exist, the number should be ascertained, and a determination reached as to company policy in handling these cases.

The question of reinstatement of employees who return physically handicapped, unable to perform the duties of their regular positions, but still able to do some sort of work, is one of policy. Among the companies surveyed, comparatively few are in a position to state definitely at this time that they will re-employ the partially disabled, and in each such company it is planned to give individual consideration to every case. Little has been done by any of the companies in planning to assist in rehabilitation. However, it should be realized that this entire problem of partial disability is one that will probably have to be met, at least in part, before the end of the war. It appears desirable, therefore, that each company, in addition to giving necessary individual treatment, should follow a consistent general policy in the matter.

Post-War Adjustments

The problem of adjustment of reinstated employees is not limited to the physically impaired. Young Joe Doakes, who left his job as office boy in the gas company to enter the Air Force, may be mustered out as a captain. It is not likely that Joe would be happy to go back to his old job. This is one of the reasons why it is important to maintain as complete and up-to-date information as possible about the employees in the service, and to start thinking now about certain individual cases. Even the private who comes back to his old desk job will find it extremely confining. Perhaps an occasional special assignment, even though nothing more than a trip from the office to the shop with some special orders, will be the means of helping in his readjustment.

About half the companies surveyed indicate that they expect a need for retraining of able-bodied employees because of changes in work procedures, etc., during their absence in the armed forces. Two companies, both with a long background of organized training, report that their existing training methods and facilities can readily be utilized to meet such needs as they arise. In another case, the importance of supervisory training is emphasized. One company has established a reserve fund to which the cost of such retraining as may be necessary will be charged.

Release of Employees Hired for War Emergency

Each employer can, with reference to employees hired for the war emergency, take certain steps that will ease the economic dislocation arising from release of such employees. The following are suggested:

1. Institute now (if not already being followed) employment practices that will help to simplify the release problem.
2. Develop an orderly and fair method of effecting releases.
3. Make plans now for work on which certain otherwise surplus personnel might be used effectively in the transition period after the war.
4. Study operations to ascertain which labor-saving practices instituted during the war should be retained, and which should be discontinued, and estimate what the resulting effect will be on personnel requirements.
5. Arrange for assistance to employees who must be released, in finding another job.

When a man leaves for military service and his place must be filled, there is a marked advantage in employing his wife, if she is qualified—and in considering qualifications the employer will do well to bear in mind that she may become a widow and a permanent employee. It is not necessary that she fill her husband's place directly; perhaps through transfer she can be placed in another job, and this will avoid a possible point of discord in the home after the war. In any event, when the man returns, the release of the wife will mean a minimum dislocation in both the social and economic life of the family. This situation is cited as illustrative of what can be done now in employment policy to ease the problems of the post-war period.

The practice of canvassing families of men entering or eligible for military service, as the first step in obtaining replacement personnel, has yielded worthwhile results. The survey shows also that some companies which have relaxed their "no married women" rule during the war, plan to return to their former policy. Lengthening of the work-week is another step that bears on this phase of the problem. Not only has the longer work-week been an obvious aid in meeting the problem of replacing men going into the armed forces; reversion to the basic week after the war will, conversely, simplify the release problem.

Human Considerations Important

The development of a fair and orderly method of effecting release of military service replacements must give consideration to the individual company's practices. If it has been the practice to employ an applicant as specific replacement for an individual entering the service, the release of the former will occur when the latter returns, and the situation is clear-cut. This may result, however, in the loss of some employees the employer would like to retain, while at the same time other temporary employees who have proved less satisfactory on the job will remain on the payroll. Other companies plan to effect releases based on ability, length of service, terms of employment, and similar factors. Where it is practicable to do so, it will aid in the over-all social and economic situation if consideration is given to the need for the individual's income in the support of his family. Such human considerations, as previously indicated, are not entirely altruistic, because employers have a high stake in the maintenance of purchasing power.

Orders of the Day

A majority of the companies surveyed expect to expand their organizations after the war in two fields: construction and sales activities. At this stage, few data appear to be available as to the estimated extent of such expansion. It is worthy of note that one of the companies consulted reports that it has formed a post-war planning committee which will include in its work the estimate of increased labor requirements for various activities. This is an instance of the trend toward internal studies by companies in the gas industry as well as others. Besides major activities like construction and sales, many small projects can undoubtedly be planned by various departments—projects which have been laid aside because of insufficient manpower.

There appears to be a widespread opinion that at least many of the labor-saving practices instituted during the war will be retained. Most of the companies are hesitant at this stage, however, to predict which will stay and which will go. Much depends upon customer reactions, the attitude of the state commissions, the length of the war, and similar factors. The one change which is generally contemplated is the discontinuance of the lengthened work-week.

As yet, none of the companies is planning any special assistance to released employees in finding another job, but it is indicated that where it is the normal policy to afford such help as is possible to an employee laid off, such policy will of course be continued. This is a subject to which as yet there has been little occasion for attention, and future developments may encourage more definite action along this line.

The Story of Daisy Blore

By Brian Hill

• Published by the Women's Gas Council, London, this highly entertaining verse was distributed in folder form to aid Britain's fuel conservation program. Front page of the folder points out that "everyone of us can help to win the war by saving fuel, like the heroine of the story told in this leaflet." It asks the public to remember that "1000 cubic feet of gas will heat water for 2,000 cups of tea or harden a medium bomb."

Hark to the tale of Daisy Blore
Who used less fuel—and won the War !
When Daisy heard the clarion call
" Save Old King Coal " from young King-Hall,
Said she, " What's gotter be has gotter !
From now on thrift shall be my motter."
And though her friends pronounced her crazy,
She stuck to what she said, did Daisy.
She said, " I know it won't be pleasant,
But some discomfort for the present
Is worth it if it only helps
Our lads to thrash those Nazi whelps."

She cut her baths to one a week
And that by inches so to speak.
Although at times it made her sigh
To find her superstructure dry
When in the bath she lay full length.
At meal-times she kept up her strength
On cold food several days a week
Her friends said, " Daise, you *are* a freak ! "
Cheerfully too she gave up toast
A thing she doted on almost.

With extra clothes on

" I hate the cold," said Daise, " but hate
Old Hitler more." And so her grate
Stayed empty though the room grew chilly,
(Her friends said, " Daise, you *are* a silly !
You'll catch your death of cold, half-frozen.")
But Daise kept warm with extra clothes on.
In three months Daisy, living rough
Had saved of coal and gas enough
To make a bomb, a big one too.
They introduced her to the crew
Who were to take it on an " Op "
And drop it on the Hun or Wop.
At their request Daise with aplomb
Inscribed her name upon the bomb.

To Germany that very night
The bomber flew and found its right
Objective too. The pilot scanned
The country down below them, and
Without so much as " Beg your pardon."
Dropped Daisy's bomb—on Berchtesgaden !

Now as it happened Hitler had
Invited Goering and that cad
Von Ribbentrop, and little Goebbels
To dine and talk about their troubles.
And on the blooming lot there fell
The bomb and blew them all to—Well,
Within a week the outlook altered
For, leaderless, the Nazis faltered,
And very soon the Allies' tanks
Stood in Berlin in serried ranks.

Ever so pleased was Daise to hear
Her bomb had ended the career
Of Adolf and his loathsome chums.
"Who ever did ! " she gasped. " Oh, crumbs
All that by simply saving fuel ! "
(Her friends said, " Daise, you *are* a jewel ! ")
Her grateful country by decree
Awarded her for life a free
Supply of fuel as recompense
For patriotic abstinence.

—*By courtesy of " Lilliput "*

" Inscribed her name upon the bomb

Free supply of fuel

Tomorrow's Range . . . *14,722 Chicago Housewives State Their Post-War Views*

F. X. Mettenet

THE domestic sales management group of The Peoples Gas Light and Coke Company of Chicago long ago felt that an extensive survey of consumer opinion constituted the first step in planning any post-war customer relations program. On this basic assumption the company began a survey of customer opinion regarding present-day modern gas ranges together with invited suggestions covering design, construction and utilization changes to meet the needs of homemakers in the post-war period.

By F. X. METTENET

Vice-President, The Peoples Gas Light & Coke Co., Chicago, Ill.

Direct Approach

The method used was simple, direct and free from company influence. A 12-page, illustrated booklet entitled, "You Know the Answers—How About Helping Us Out," was presented to Chicago domestic gas users by company representatives. In this presentation the customer was invited to supply answers to the direct questions and to add comments if he or she felt inclined to do so. It was urged that this be done at the convenience of the customer. After several days the booklets were picked up, and the Statistical Department of Peoples Gas compiled the results.

The survey was begun on August 1 and at the present writing (December 1), 14,722 consumer opinions have been collated cumulatively. It should be added that though the survey is being continued for customer contact reasons, future additions to the data obtained will show little, if any, divergence from the results now tabulated and published.

For purposes of convenience to both the customer and the statistical department of the company, the booklet was divided into the following general sections:

1. Opinions on overall style for beauty and utility.
2. The Oven.
3. The Broiler.
4. The Top Burners.
5. Special Features.
6. Specific comments and suggestions.

Concerning Overall Appeal

Accompanying illustrations show far more clearly than words what the largest number of Chicago housewives feel the post-war gas range should look like. Forty-five per cent voted for the full table-top model and 26% for its nearest counterpart, the console variation. Notice that the two together represent 71% of the entire survey.

The lack of appeal for more modernistic designs has caused some surprise. It should be remembered, however, that in the present war period conservatism has been the keynote of present day efficient living. "Flights of fancy" in design give way to "how practical is it and how dependable?" Modernity in design is progressive with time and change and cannot be digested in sudden big chunks. One must be educated to like olives, draped shoulders in men's suits and "boogie woogie."

Here is what the poll showed as to the favorite overall width of the modern gas range:

36 inches	10%
38 inches	13%
40 inches	43%
42 inches	20%
44 inches	14%

Does the modern housewife want her gas range connected flush to the wall?

85% said Yes, while
15% said No.

How about color:

56% voted for an all-white range
41% preferred white and black
3% had a personal desire for some other color.

The "white and black" voters for the most part specifically had black cooking tops and the range base in mind. The appearance of cleanliness, of course, was the motivating influence.

Spontaneous Observations

Here are some interesting spontaneous observations by Chicago housewives:

There is a general appeal for materials and design that will permit cleaning to be done even easier than now.

—include a warming compartment for keeping rolls, dishes, etc., at serving temperature.

—almost universal praise is indicated for appearance. No other home equipment has shown such progress in design and construction.

—many housewives feel that condiment sets were designed more for appearance than utility. They also find them to be inaccessible.

—many deplore use of space for storage. Would rather see area used for warming closet, oven, deep well cooker or griddle.

One homemaker wonders whether it is possible to have a combination deep well cooker and top burner.

—another suggests adjustable legs covered by panel. These might be used to level range on uneven floor or to adjust a more comfortable cooking top height.

First and second choices of Chicago housewives for the post-war gas range

Now for the Oven

Where do women prefer to have the oven placed in their range? High? Medium? Low? Here are the answers:

(1) Low, 47% (Table top model 36 inches high)
(2) Medium High, 37% (Higher than table top 48 inches high)
(3) High, 16% (Higher than table top 52 inches high)

Twenty per cent of all returns indicated an oven size of 14 inches high, 19 inches deep and 16 inches wide. The average of all returns is very close to the majority choice, being 14.9 inches high, 19.3 inches deep and 17 inches wide.

Here is some interesting data on oven window acceptance:

50% voted for front oven window
4% preferred the oven window on top
7% said, "let's have both front and top"
39% felt they would rather do without any oven windows.

As far as "side or middle" location of the oven, tradition seems to exert a strong influence:

Located at side of range....77%
Located in middle of range..23%

Here are the unsolicited suggestions covering the oven for the "ultimate" in modern gas ranges:

Why not have a light in the gas oven that turns on automatically when the door is opened?

Let's take the "screech" out of oven racks and broiler pans, is an often repeated suggestion.

To take the "stoop out of cooking" as far as possible, cannot the broiler and the oven be on the same level?

It is often desirable to remove oven linings for a thorough cleaning. Is a one-piece easily removable oven lining an impossibility?

A customer suggested a heat indicator on the outside of the oven. She feels it gives her the same sense of assurance as a thermometer does in a refrigerator.

Another customer suggests that the oven burner would be easier to light if the oven burner cock were close by.

Broiler Data Analyzed

Shall it be a high broiler or a low broiler? And which is preferable, the drawer type or one that "swings out"? Here are the collected opinions:

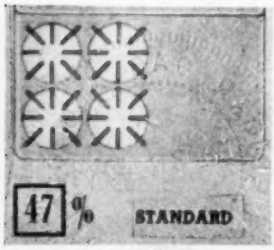
77% voted for a high broiler
23% preferred a low broiler
56% felt that the drawer type had definite advantages
44% on the other hand, liked the "swing out" broiler.

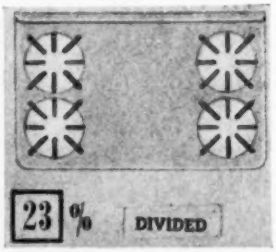
General comments on the broiler include the following interesting items:

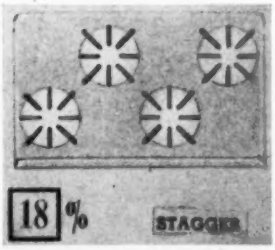
How about using roller bearing for broiler rack and drip pan?

Here is a novel idea—a "spit" arrangement for the broiler. The questioner relies on the ingenuity of the gas range designer to make it workable.

Toast and steak require widely different heat intensities and broiling times. The suggestion is for two broiler burners of different heat inputs and heat distribution.







An alert housewife wonders whether a broiler pan could not be built like a turn table. This will make it easier to add and remove broiled foods requiring different broiling times.

Several customers claim that even the best present broiler burners do not spread heat evenly over the surface of the broiler pans. They wonder if some type of heating element is possible, designed on the same principle as the heating elements in a radiant type Gas heater.

Cooking Top Burners

"How many top burners do you want on your modern gas range?" was the first question asked.

87% said "four"
10% said "six"

How do upwards of 14,000 housewives want their burners arranged on the cooking top? A glance at the illustrations below tells the whole story.

The 47% vote for the "standard" arrangement indicates some opinion due to tradition. This is borne out by the relatively high rate of 18% for a "stagger" top, an arrangement that has a fairly recent origin.

A rather difficult question concerned the desired height of the back panel. Thirty-five per cent said 6 inches, 21% felt that 8 inches was better and 44% included variations from 2 inches to 12 inches. It is interesting to note that the average of all falls close to the mean between the two main choices. This average is 6.9 inches.

Following is data, presented without comment, on cooking top accessories:

98% demanded automatic top burner lighting devices.
2% felt they would rather do without.
73% voted for some type of cooking top illumination.
27% felt there was no need for it.
85% wanted a giant burner.
15% preferred all burners of "standard" capacity.
98% asked for simmer speed burners
2% did not want them.

And here are some of the invited suggestions covering top burners:

"Why not make all top burners 'giant' burners for better heat distribution," says one observing housewife.

Closely associated with this idea is another that suggests the "click" arrangement to indicate a very low flame on the main burners.

Still others observed that the simmer burner "click" provided a too hot and too concentrated heat.

The growing importance of home canning brings the suggestion that there be five top burners on every range—a conventional size in each corner, and an "extra extra" large size burner in the center on which to heat preserving kettles evenly.

"Let's have top burner grids that remain securely in place when wiping the top of the range," is a common appeal.

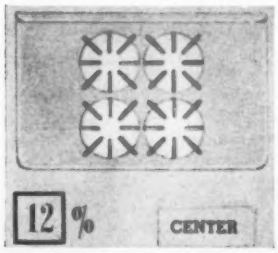
Many housewives have wondered whether burner cocks and other necessary exposed working parts could be less conspicuous.

A distinctly modern idea was contributed by one customer. "Why not push button control for gas burners" she wondered.

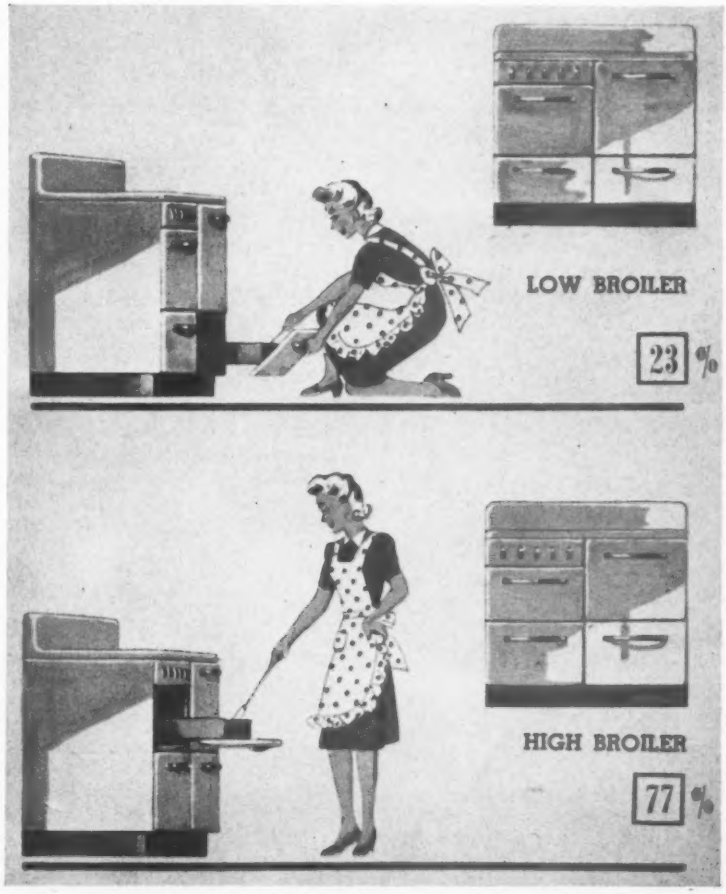
Lastly, here are opinions on "Special Features":

What type of gas range storage space is most convenient for use?

69% said, "the drawer type."
31% voted for the door type.



Here's how they voted on low and high broilers



Should the modern gas range be equipped with top covers?

73% said "yes"
27% said "no"

How about time reminders?

92% wanted them
8% felt they served no important purpose

Condiment sets as standard equipment resulted in this vote:

72% wanted them
28% did not wish them

The poll on the desirability of a deep well cooker as part of the modern gas range inspired this thought provocating result:

48% said, "Yes"
52% said, "No"

Also indicative of modern trends was the vote on automatic oven lighting:

77% voted in favor of it
23% felt no necessity for it

As for oven clock control:

75% wanted it
25% did not

Finally:

88% insisted that inside corners be round in future modern gas ranges.
12% voted for square corners.

Here are some collateral data:

In the course of the survey every square mile area in Chicago was sampled in ratio to the existing domestic consumers.

Also, wherever possible, the following information was secured:

1. The apparent economic status of the customer, whether: (a) High, (b) Low, or (c) Medium.
2. The estimated age of the housewife.
3. The number in the family.
4. The type of dwelling occupied, whether: (a) A single family residence, (b) A 2-flat building or, (c) A multiple apartment building.
5. The number and type of gas appliances the family use.

The statistical department of the company is just completing an exhaustive study of any deviation from the general results of the survey that may be indicated by segregating and collating the returns in the above separate classifications.

It is safe to say now that there will be no appreciable deviation. In other words, there is a general uniformity of opinion regarding important specifications of the modern gas range whether the customer is rich or poor, young or old, living in a single family residence or a small furnished apartment, whether the family is large or small and irrespective of their degree of acquaintance with other domestic gas appliances.

Rochester Selected for War Conference on Industrial and Commercial Gas

Charles G. Young

THE 1944 American Gas Association War Conference on Industrial and Commercial Gas will be held at Hotel Seneca, Rochester, N. Y., Thursday and Friday, March 30 and 31, it has been announced by Charles G. Young, chairman of the Industrial and Commercial Gas Section. This conference, which was held in Detroit last Spring, is the year's outstanding gathering of industrial and commercial gas men and equipment manufacturers.

The handling of many problems that have arisen in applying industrial gas to higher speed, higher quality and greater quantity production in war plants is now teaching industrial gas men valuable lessons Many of these lessons will be analyzed thoroughly at the conference and interpreted in terms of better industrial gas utilization in the future. Also, lessons being learned from the operation of commercial cooking and baking equipment under the terrific strains imposed by war-time operations in public eating places will receive close attention.

Post-war plans as they are developing in the industrial and commercial gas fields will be featured. The handling of problems concerning natural, manufactured and mixed gases will make this event of value to representatives of every gas company and every appliance and equipment manufacturer.

Ivar Lundgaard, manager, industrial and commercial gas operations, Rochester, has been appointed by Mr. Young to head up the Program Committee. All members of the Managing Committee of the Industrial and Commercial Gas Section are now reviewing subjects and features for the conference. Their recommendations will be the basis for the final program, which will be prepared by Mr. Lundgaard's Committee, thus assuring that the conference will cover subjects of interests to all.

The Managing Committee has voted to hold its next meeting in Rochester the day prior to the conference.

Manpower Task Committee

THE Office of War Utilities announces the appointment of a Joint Task Committee on Manpower to consider the problems of labor shortages and essential manpower supply.

The OWU has expressed the hope that through the Joint Task Committee, it can be of real assistance in presenting some of these problems to the other Government agencies involved, and that a policy can be developed that will afford relief in critical instances.

Natural gas representatives on the Joint Task Committee are J. M. Herrmann, The Peoples Gas Light and Coke Company, Chicago; F. M. Banks, Southern California Gas Company, Los Angeles; J. French Robinson, The East Ohio Gas Company, Cleveland, and E. V. Kesinger, Natural Gas Pipe Line Company of America.

Manufactured gas representatives are Ernest R. Acker, Central Hudson Gas and Electric Corp., Poughkeepsie, New York; Norman B. Bertolette, Hartford Gas Company, Hartford, Connecticut; Mrs. Helen S. Steers, Brooklyn Borough Gas Company, and James D. Dingwell, Jr., Washington Gas Light Company.

Pennsylvania Receives Security Award

PENNSYLVANIA Power & Light Company is one of the first companies to receive the recently established National Security Award.

The National Security Award is granted by the Office of Civilian Defense to plants and facilities which have achieved outstanding programs for the protection of their plants, employees, and production or service operations against fire, explosion, air raid, accident, and other emergencies.

The award is granted not only to factories manufacturing war materials, but also to plants and facilities engaged in providing essential civilian supplies and services—such as food storage and processing plants, communications and transportation facilities, and public utilities.

The Industrial and Commercial Gas Outlook

By PAUL R. TAYLOR

Director, Natural Gas Division, Office of War Utilities, War Production Board, Washington, D. C.

Paul R. Taylor

ANY assignment which, in these days, calls for the exercise of the gift of prophecy is indeed difficult. Even though the use of this gift is difficult, nevertheless, the crystal ball has been duly polished and looked into every day by those who would attempt to foretell events, policies and trends. The results have been interesting, but they have largely proven that "hindsight is better than foresight." Therefore, it is with some trepidation and hesitancy that I attempt to call upon any latent occult ability which I may have and proceed to discuss the subject which has been given me.

Natural Gas Role

I shall confine my remarks to the part played by natural gas. My long interest and association with the manufactured gas industry makes me loath to avoid some discussion of its high importance in the events of today. Referring again to prophecy, there is enough of background and history in the utilization of natural gas from which certain inescapable conclusions can be drawn that will establish a trend into the future. These can be reasonably discussed with the idea of presenting some generalities that cannot be labeled as pure prophecy.

I need not delineate to this Section of the American Gas Association the history of the development of the industrial utilization of gas during the past two decades. Year by year during that period you have participated in that development. You have listened to able scientists and engineers describe the experiments and research that led to ever improved uses and methods. You have, as an organization, prompted and urged research along certain lines. You have seen the best designs of equipment manufacturers eagerly adapted for use by the gas utilities' customers for some operation hitherto deemed awkward or impossible. This period of research and development cannot be passed over without some reference to its continuity and the faithful piecing together of scientific fragments resulting year after year. Choose at random a few of the articles presented to this Section and published in its annals since World War I. If you have an interest in that sort of thing you will detect a steady intense trend towards the perfection of the use of natural gas that will create for you a real appreciation of what has been accomplished.

Mr. Taylor pins an "E" on natural gas for its part in meeting the colossal war demands. For the future, he predicts success limited only by the availability of this ideal fuel.

With the advent of this present war came a colossal demand for mechanical things. Our observation of the war while we were still on the side lines showed us definitely that victory would eventually come to that side having the greatest production of the engines and munitions of war. Therefore, it was highly important to throw into high gear a program for the production of tons upon tons of war machinery. Inventive genius went to work to develop offensive and defensive equipment. New intricacies were required. Added strength of materials had to be developed. Weight of certain equipment had to be reduced by substitute metals. This meant processing of various kinds —melting—annealing—tempering—welding—extrusion, all requiring controlled heat in varying degrees of quantity and intensity. This demand for additional heat meant the introduction of fuel into industrial areas, both old and new. It called for more manpower, more transportation, more fuel processing equipment if all kinds of fuel were to be utilized.

Ready for Big Test

At this juncture natural gas became truly a "natural." Here was industry's answer to a prayer for an ideal fuel. The twenty years' preparation was ready for the big test. Over large areas existed a fuel laid down in the earth's strata; just how, nobody knows. It is almost as if some superior power had at some time decided upon a huge laboratory experiment, an experiment designed to distill out from the cruder fuels of this sphere a combustible perfect for instant use. Following the gigantic experiment the resultant was hidden away for mankind to discover and use in his greatest day of need. This was most certainly the time. The natural gas industry stepped forward to offer what it had. An impartial look at what the industry could contribute is impressive.

A fuel, gaseous in form, in a combustible state, free from impurity, high in heating value. A fuel requiring a minimum of manpower to produce, its delivery imposing no load on the country's transportation systems, simply controlled and its utilization requiring a minimum amount of critical materials.

In addition, the industry offered a background of inventive ability, scientific research and proven results, to which I have already referred, that could immediately put this fuel to work.

New war plants, making material and equipment of every kind, were built in natural gas areas. Pipe line

Presented at Industrial and Commercial Gas Luncheon, American Gas Association Annual Meeting, St. Louis, Mo., October 26, 1943.

systems were enlarged to carry more gas to existing industrial areas. Because of its simple adaptability natural gas equipment, automatically controlled to a fine degree, was built directly into modern production lines.

It was soon discovered that no one fuel can serve the needs of a single industrial area. However, by its very nature, natural gas invited the demands of the manufacturer who realized that it was the fuel which would make it possible for him to complete most quickly and efficiently his particular war job. Demands for gas mounted in a most extraordinary manner, necessitating its control and allocation to essential needs.

That is the story up to date; an achievement that rates an "Excellent" to the entire industry, an accomplishment that could not have resulted except for the coordination of the natural gas producer, the transmission and distribution utilities, the equipment manufacturers and, finally, but by no means least, the admirable work, covering many years, of your Section of the American Gas Association.

Post-War Outlook

What, then, is the outlook? Nobody knows how long the war will continue or what magnitude it will attain. We may be making war machinery, armor plate and munitions for a long time to come. Natural gas reserves are being heavily drawn upon. The industry is investing heavily in new facilities designed to distribute more gas to war production, and to augment supplies of natural gas where reserves have been depleted. More wells are being drilled. The demands of war have accelerated the use of this resource and thereby shortened the years of its availability; for insofar as we know natural gas is irreplaceable. All this, the unknown date marking the end of the war, a demand for natural gas which must be met, leads us to a definite conclusion: this resource must be husbanded most carefully.

Who is better qualified to realize the importance of this conclusion and plan the most efficient use of natural gas than those who own, control and operate these reserves of energy? I refer to the producers, the pipeline companies and the distribution companies. I have had the opportunity and the pleasure of conferring and advising with representatives of this industry during the past several months. I have gone over with them individually and collectively the various problems that arise daily to confound the orderly processes of operation. No group of people has ever more unselfishly and seriously given time and ability in order to contribute sound thinking to problems of the industry which include getting gas to the place where the war effort most needs it and putting it to a quick and efficient use.

I think this is a reflection of the attitude of everybody engaged in this business. They have cooperated by accepting necessary war-time restrictions. They have offered constructive suggestions and criticisms. They have invested their funds in new facilities. They have, I believe, come to feel the importance of harmonizing their efforts with small regard for individual sacrifice that must of necessity result.

When I look at the results up to date I am convinced that this industry will continue successfully to carry its share of the fuel burden for the remainder of the war. I am certain that the industry will more and more come to realize that its product is more valuable than considered, hitherto. It has sensed that its value cannot be longer considered in terms of heating value alone. I feel sure that the industry will more than ever before encourage, assist and participate in the research necessary to develop still further the possible uses of natural gas for industry. Beyond a doubt, reserves of gas will be more carefully computed and long term planning inaugurated for the purpose of getting the most from this valuable asset.

And when hostilities cease and the pressure of production is off, this industry will emerge into the post-war period with an enviable record of achievement and the ability to put to work in the economy of that era more efficiently than ever before the remaining reserves of that romantic, useful and—may I say—glamorous fuel, natural gas.

Survey of Underground Natural Gas Storage Projects

A SURVEY of underground natural gas storage projects in the United States was recently published and distributed by the Research and Coordinating Committee of the Interstate Oil Compact Commission. As noted in the foreword of the report by E. G. Dahlgren, technical secretary of the committee, the survey resulted from a recommendation at the 1942 Fall meeting of the Commission that greater use be made of depleted and near depleted oil and gas reservoirs for natural gas storage.

Dan O. Howard, petroleum geologist, Oil and Gas Conservation Department, Oklahoma Corporation Commission, Oklahoma City, is chairman of the Research and Coordinating Committee which made the study. It is based upon a search of existing literature, including an excellent symposium on underground gas storage conducted by the Natural Gas Section of the American Gas Association at its 1940 meeting in Houston, Texas. In addition, the committee conferred with individuals familiar with storage operations.

Specifically, the report deals with underground storage operations in Arkansas, California, Kansas, Kentucky, New Mexico, Ohio, Oklahoma, Pennsylvania, and Texas.

The use of underground storage has played an important part in the war effort, the report points out. Tremendous demands, resulting from the war effort, might not have been met in the Appalachian area during the past year and a half if the use of underground storage had not come into common practice in recent years.

Conservation of gas has been furthered, the report continues, because it is possible to transfer gas into storage from highly competitive areas where flush production might encourage uneconomical use of the product on account of a need for an immediate market. Underground storage has also been the boon to the small stripper production of many of the Appalachian gas wells which can only be operated economically if they are used 365 days a year, since their daily production has been greatly reduced in recent years. The abandonment of many small wells, with consequent lack of total depletion of the area and the resulting loss of this reserve for any practical use, has been avoided because these wells can now be produced with at least a small profit by using them every day in the year.

The report is being distributed by the Interstate Oil Compact Commission, State Capitol Building, Oklahoma City 5, Oklahoma.

Post-War Building . . . *FHA Surveys the New Home and Modernization Market*

Commissioner Ferguson

By Abner H. Ferguson

Commissioner, Federal Housing Administration, Washington, D. C.

ALTHOUGH all military authorities and Allied political leaders caution against over-optimism concerning the progress and duration of the war, it is none too soon for those in the building and allied industries, including the gas utilities, to do some constructive, down-to-earth thinking as to the ways and means of returning to normal peacetime operations. This is especially true since there is a good deal of misunderstanding and confusion about a post-war building program of boom proportions due to the astronomical estimates that have been published over the past twelve months. In all fairness to most of the estimators, however, be it said that their estimates were usually projected over a period of from several up to as long as ten years.

The Federal Housing Administration, on the other hand, felt that it would be helpful to building industry interests to have information immediately useful to them in the period of reconversion after the cessation of hostilities. Consequently, several months ago it made a survey through its 62 field offices to determine particularly what home builders' plans were, what land would be immediately available for improvement and like questions.

Obviously, this study of postwar housing prospects is of peculiar interest to American Gas Association members. Probably no market is more important to utilities generally in the building and maintaining of load than the housing market, which includes, of course, both new residential construction and the repair and modernization of existing homes.

The interests of the utility in postwar housing parallel these two fields. Each appliance sale helps to build gas load; each new home constructed represents to some utility a new service customer for the entire life of the structure. The modernization of homes will greatly expand demand for replacement of outworn or outmoded equipment. Similarly, in the case of new construction, demand will be insistent, and competition will be keen for house heating, water heating, cooking and refrigeration.

Five Billion Expenditure

The results of the FHA survey and of other studies indicate a probable total expenditure of some five billion dollars within the first twelve months after wartime restrictions are lifted for the construction of new houses and the repair and modernization of existing houses. On this basis the building industry will provide an average of 2,400,000 man years of employment during the year. An estimated 1,250,000 men will be employed on the site and the industries allied to construction will employ an average of 1,150,000 more off the construction site, or a total of 2,400,000.

In the beginning, of course, total employment will be low, perhaps around 500,000 men, but as the industry gathers momentum it is quite possible that at the peak of activity during the year between three and four million men will be employed.

The larger part of this expenditure and employment will, without question, be found in the field of repair and improvement of existing houses. Such work may quickly reach a volume of about three billion dollars in the first year after the war. A survey made somewhat earlier by the U. S. Chamber of Commerce showed that people have plans now involving over six billion dollars of repair work waiting to be done when restrictions are lifted. Just how much of this expenditure will go into labor and how much into materials there is, of course, no way of estimating.

A typical FHA-insured small home in Charlotte, N. C., valued at $6500

On the assumption, however, that they would be equally divided, even the conservative estimate of three billion dollars spent for this purpose in the first twelve months would furnish direct employment to an average of 875,000 people.

In its attempt to determine new construction prospects, the FHA sought particularly to know the amount of land, both with and without utilities, available to builders, and the number of builders ready to start immediate construction. The FHA has also been looking into the question of the types of materials that can be quickly procured. Of course, there is no question but that financial institutions have adequate funds to finance this new construction.

Naturally, no absolute predictions can be made, and no power on earth can enable us to foresee all the factors which will affect a return to peacetime activity. The most important unknown factor, of course, is when the war will end and how it will end. For instance, suppose, as it is generally believed possible, that the war is over in Europe, but is continuing in the Pacific. In such case, how much wartime manufacture will continue, and how many of the wartime restrictions will have to be continued on materials and manpower? In such case, also, will there be partial demobilization and, if so, what effect will that have upon employment and the national income?

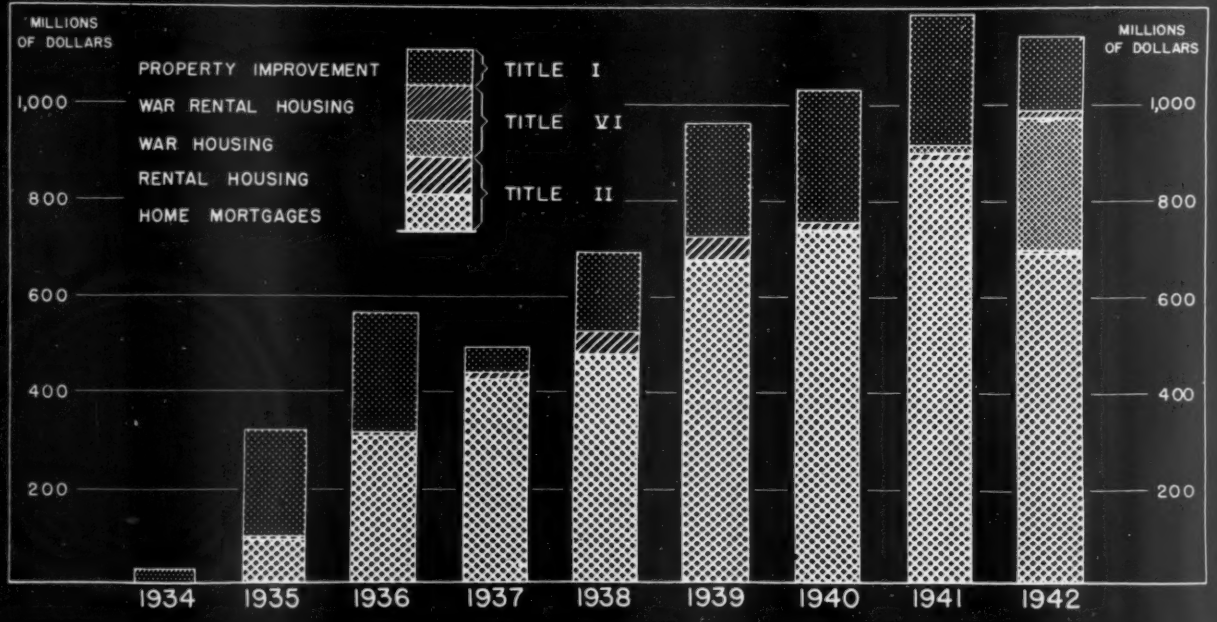
As to new construction, anyone with a knowledge of the industry knows that under the most favorable circumstances it will take time to restore the delicate balance necessary to the proper functioning of the home building industry and that the process will be gradual at best. It would hardly be possible to achieve home building in large volume overnight since the sources of the industry are to be found in almost every other in the country—acquisition of land, production of raw material, manufacture of that material into specific products, transportation and assemblage of the various products, actual construction and final sale—and the tremendously important job of financing each and every one of the steps all along the way. And all of these industrial activities have been more or less completely disrupted by the war. Each one must reconvert to peacetime operations.

The many estimates of post-war home construction run as high as a million or even two million homes a year for ten years. In all probability even the million homes figure is a bit high, unless private enterprise and private capital can so organize and correlate their joint efforts as to better their past production performance. But whatever the figure is, what is often overlooked is the fact that revival of construction will be a gradual process with large volume reached only after a period of years—not a million new homes started the day after wartime restrictions are lifted or probably even within twelve months.

It should be remembered, however, that such figures are of estimated *needs* and represent an average number of units to be constructed over a given period of years in order to *fill* the need. On the other hand, the FHA survey represents the amount of new home construction that private builders are

YEARLY VOLUME OF F H A INSURANCE WRITTEN

1934 – 1942



NEW DWELLING UNITS PROVIDED UNDER THE FHA PROGRAM, 1935-1942

	Title I	Title II		Title VI		
Year	Class 3 New Small Homes	Sec. 203 New Small Homes	Sec. 207 Rental Housing	Sec. 603 War Housing	Sec. 608 War Rental Housing	Total
1935	—	13,226	738	—	—	13,964
1936	—	48,752	625	—	—	49,377
1937	—	56,980	3,032	—	—	60,012
1938	5,845	100,966	11,905	—	—	118,716
1939	10,783	133,874	13,342	—	—	157,999
1940	10,194	166,451	3,562	—	—	180,207
1941	9,145	180,156	3,580	27,463	—	220,344
1942	4,010	41,578	1,539	110,380	2,253	159,760

PUBLIC AND PRIVATE NONFARM DWELLINGS: ESTIMATED NUMBER OF PRIVATELY FINANCED 1-FAMILY, 2-FAMILY, AND MULTI-FAMILY UNITS STARTED, AS REPORTED BY BUREAU OF LABOR STATISTICS, 1935-1942

	Privately Financed					
Year	1-Family	2-Family	Multi-Family	Total	Total Publicly Financed	Total Nonfarm
1935	183,000	7,700	25,000	215,700	5,300	221,000
1936	243,900	14,300	46,000	304,200	14,800	319,000
1937	266,800	16,300	49,300	332,400	3,600	336,000
1938	316,400	17,900	65,000	399,300	6,700	406,000
1939	373,000	20,000	66,000	459,000	56,000	515,000
1940	448,000	25,000	57,000	530,000	73,000	603,000
1941	533,000	28,000	58,000	619,000	96,000	715,000
1942	251,000	17,000	31,000	299,000	194,000	493,000

ready to start immediately after the green light is given, or shortly thereafter. A preliminary summing up of these estimates shows from 350,000 to 400,000 dwelling units will go into construction within the first year of a return to peacetime economic conditions. These houses will be built by about 20,000 builders at a cost of around $2,000,000,000.

The report shows further that a vast majority of the areas where the demand is expected during the first post-war year have ample supplies of lots with utilities already installed. This will greatly speed the resumption of normal home building activity, especially in the medium and upper price brackets where the initial impetus of housing demand is expected to be. In most cities, also, the inventory of developed lots is sufficient to meet a substantial and continuing demand for new construction. About half of the cities of 50,000 or more population are expected to require development of 25 per cent or less of the lots from unimproved acreage to meet land needs even for a continuing substantial post-war demand. Only one out of five cities of 50,000 or more population reported an inadequate supply of developed lots to permit immediate construction without time spent in necessary subdivision planning and utility installations and extensions.

One very interesting fact brought out by the survey is the number of capable builders prepared to resume activity in the early post-war months No area of any importance in the entire country is expected to have a scarcity of building organizations in spite of the fact that those now operating are less than a fourth of the 20,000 to 22,000 planning to resume operations within the first post-war year. And, as already pointed out, these builders will start the construction of about 400,000 new houses within the first year of normal peacetime conditions—in other words, an average of about 20 houses each.

350,000 Post-War Employment

Looked at in terms of employment, on the assumption that the construction of a typical house furnishes the equivalent of one year's full employment for one man, then 350,000 people will be put to work for the first post-war year. However, since expansion of construction activity is a gradual process, continually gathering momentum, by the end of the year new home construction may very well furnish employment to about 700,000 people—and at the site of construction only. By the end of the first post-war year, employment, including off the site labor, may very well be provided to 1,500,000 men in home construction and its allied industries. These figures, of course, do not include em-

This home in Portland, Ore., is valued by FHA at $4650

ployment in repair and improvement work.

It should not be forgotten, however, that any estimate of post-war employment depends primarily upon the availability of labor and also upon the availability of materials. Skilled labor may be particularly short and the great deferred need for repair and maintenance jobs could easily absorb a large part of the skilled labor that otherwise would seek employment in the new construction field.

As for the materials situation, that also is a bit complicated. Some building materials do not change by reason of war. They simply have to fill new needs. Lumber, for instance, does not change, neither does roofing nor siding. Copper wire remains copper wire. Whatever difficulty develops will be in equipment, in the manufactured items —in furnaces, radiators, water heaters, ranges, refrigerators, bath tubs. In this field, it will probably take the industry from two to four months to reconvert their factories and resume normal production. I am told that the copper situation has eased somewhat and that supplies of wire, cable and pipe can be made quickly available.

Design and Distribution

Furthermore, rather than completely retooling for production of new and differently designed products, many manufacturers of household equipment plan to fabricate and market the last models they were producing in order to get into production as quickly as possible. Then, too, there is the question of rebuilding sales and distribution systems. That in itself will be quite a job and will depend largely upon the availability of competent men.

As to the design of the houses to be built, it is doubtful that there will be any great revolutionary changes. Custom and tradition are not easily broken down and in all probability, as far at least as the returning soldier is concerned, his dream of home now centers around the familiar little white cottage with its picket fence and that is what he is going to want when he does get home.

As to the price range of houses to be built after the war, initially the demand may be in the middle and upper-middle brackets, since the construction of such houses was almost the first casualty of the war, although in areas where no housing has been permitted during the war there will undoubtedly be a diversity of interest and building for all groups. The bulk of the demand in the after-the-war years, however, will be in the middle and lower-middle brackets. This means a continuation of the trend already under way for some time for the large scale production of houses of low cost and for the type of lower cost equipment that will efficiently meet their needs.

There are many factors that will enter into costs. The availability of labor and the high wages paid to labor during wartime as well as the higher price level of building supplies are elements that may affect costs in the immediate post-war period. Also the rental levels prevailing as a result of rent controls should they remain in force for a while, may affect the construction of new houses at prices that cannot meet the competition in the available rental market of existing houses.

Further Housing Surveys

Because of the many uncertain factors already enumerated and the impossibility of predetermining the general character of the national economy after the war, the FHA survey may be best looked upon perhaps as the first of a series of such surveys. When national policies for demobilization and reconversion become established and the time factors of the transition period are clearer, the FHA will join with other units of the National Housing Agency in further surveys of housing demand, capacity and other related matters.

Under any circumstances, in making plans for the future it is well for the industry to bear in mind that the present Congress has already taken precautionary steps to assure the continued operation of the FHA program. These have taken the form of extending FHA's authority to insure loans made for the repair and modernization of existing properties until July 1, 1947, and to insure mortgage loans for the purpose of financing the purchase of existing structures until July 1, 1946. The insurance of mortgage loans financing new construction, of course, required no Congressional action since the statutory authority for that operation is limited only by the dollar amount of all mortgage insurance that may be written and outstanding at any one time.

This action by Congress should give confidence to all those interested in the building industry that insofar as it is now possible the FHA stands ready to offer its services to the fullest extent in an efficient and speedy return to normal peacetime building activity.

As far as new construction is concerned, at the present time there remains on the FHA books practically a half billion dollars of unused insurance authorization still outstanding under Title II of the National Housing Act—sufficient to finance the construction of at least one hundred thousand homes. This unused authorization remains immediately available, and, in addition, the law permits the President to increase this insurance authorization by an additional billion dollars if and when the need becomes apparent.

Possibly a good criterion for the rate at which new building and home repair work can be achieved after the return of peace is to be found in FHA records for the past eight years since, until the full impact of the war, they reflect the gradual increase in all home construction and repairs in the country during the recovery period after the depression of the 1930's. From a low of approximately $30,500,000 in 1934, there was a gradual increase up to a total of $1,185,852,000 for the year 1941, and a cumulative total for the period beginning in 1934 through 1942 of $6,398,600,000. Since December 31, 1942, including the war housing mortgage and repair insurance programs, this figure has risen to well over $7,000,000,000. The accompanying chart and tables show the breakdown of these expenditures, as well as the number of new dwelling units provided.

With the restoration and acceleration of this pace, there is every reason to look forward to the best building years this country has ever known.

Safety Conference

THE Southern Safety Conference will be held in Atlanta, Georgia, March 6 and 7. Gas men from 14 southeastern states are invited. H. Carl Wolf, president of the Atlanta Gas Light Company, is general chairman of the conference.

What Price Safety? . . . *Management's Responsibility to Safeguard Its Employees*

By N. C. McGowen

President, United Gas Pipe Line Co., Shreveport, La.

N. C. McGowen

FOR many years I have been keenly interested in safety work and have realized its importance. At first, to my mind, it was just one of those things which every organization should have; and then, as we did not seem to be getting results and the tragedy of industrial accidents became fully impressed upon me, I realized that it was my duty—the duty of management—to see that something was done about it.

Management's Obligations

Management, to be successful, must meet and discharge three primary obligations, and unless those obligations can be fully and properly discharged, no business can be really successful:

First, management must discharge an obligation which it owes to its customers to see that its goods or services are as represented and at prices or costs to the customer that are fair and reasonable.

Second, management must meet fully its responsibilities to the workers employed within the organization, to the end that they receive a fair and living wage, commensurate with their individual abilities, and that they have the assurance of security in their jobs so long as they efficiently perform the duties assigned to them.

And, third, management must discharge its obligations to its investors, to safeguard the values behind their securities and to pay any interest or dividends which may be due on those securities.

A business which improperly discharged any of the above obligations could easily be compared to an engine whose governor did not function properly: it would not be long before it had torn itself to pieces.

Safe operating practices might be called one of the important cogs in the machinery of management which must be kept well oiled and running smoothly. If management does not inaugurate and continually see that safe operating practices are used, then management is not only failing to meet its obligations to its corps of workers but is impairing its ability to discharge its obligations both to the consumer and to the security holder.

Safe operating practices must not only be outlined but they must be so thoroughly and fully instilled in an organization that in every move and every action which the employee makes he will unconsciously be thinking and acting safely.

A Continuing Responsibility

This undoubtedly is the job of management. Too many organizations, seeking to organize and set up a safety department, feel that when the safety department has sent out illustrated bulletins, the duty has been discharged. A safety department is helpless under such a system. The safety department can only correlate and work with the various departments, from officers down to foremen, and through foremen to the individuals, in the study of each individual's job and the helpful suggestions that come from that study. But the job itself must be done with the men themselves, with the utmost cooperation and support by the foremen, superintendents and top officials of the company. No bulletin can save a man from accident if he is not so fully immersed in safe thinking that safety is impressed subconsciously on his mind in his every move, causing him to take the necessary precautions.

It is just as necessary to train a man in safety work and just as much a part of his training as to train him to do the job itself. To train him to do the job and neglect to continue to teach him safety methods would be like the lawyer who, after receiving his law degree and being admitted to the bar and hanging up his shingle, never opened a law book. Safety must be studied constantly and practiced daily, just as the lawyer must continue to study the various applications of the laws by the courts to guide him in the successful practice of his profession.

Safety Pays Dividends

Show me a company or an industry that lets up on its safety meetings and safety work and fails to analyze in local meetings of the employees at frequent intervals the results of accidents, no matter how minor, and I will show you a company that is slipping into bad operating practices.

I do not intend to get into all the details of safety work. I do want to impress upon you, however, that it is the job of management right from the top and is a duty which it owes to its employees, but also, as I will repeat, it is for the benefit of the consumers and the stockholders.

I have heard some people make the statement that safety pays dividends, and they probably were talking about money dividends. It is true that safety work does pay actual cash dividends, represented by a reduction in the cost of compensation insurance resulting from an improved safety record. However, in addition to these cash dividends, there are even greater intangible benefits which are a direct result of safety activities, such as increased operating efficiency, improved employee morale, and better public relations.

In a safety program, just as in an

Address before Safety and Personnel Conference, Ebasco client companies, Chicago, Illinois, October 8, 1943.

advertising program, it is sometimes hard to put your finger on these intangible benefits, but we know they are present; and certainly these benefits in our safety programs are well worth their cost in effort and money.

A good safety program necessitates frequent safety meetings, and those meetings should be in groups small enough so that there is no hesitancy on the part of any employee, no matter what his job in the company, to express himself freely and develop ideas as to better and safer ways of doing the job. The very nature of these meetings promotes and invokes discussion of other operating practices. They develop better ways, more efficient ways to do the work, and most of all, they keep an organization on its toes. They decrease the number of widows and fatherless children. Management has a chance to observe and select abilities in the organization that show up in meetings of this kind, which make for the development and promotion of the personnel. Safety meetings are an important part of the operations of any well run organization which promote efficiency and aid management in discharging equally its three obligations: to the customer, to the employee and to the security holder.

War Increases Safety Need

Today there is an even greater need for safety work: With a large part of our personnel on the battle fronts and in the training camps, it is more important than ever to practice and preach safety, particularly to the new employees who must be taken into industry to replace those who have gone to war, so that safety may do its full part in helping to produce the materials of war which are so vitally needed to supply our armed forces and those of our allies,—by keeping down to a minimum the number of lost man-hours due to accidents;—and to help keep industry solvent so that the victorious men and women of our armed forces will have jobs to return to in peace-time.

No matter how hard we work on this important part of our business, we will never reach an ideal. Accidents will occur not only with the new employees, but they will also occur with the "old heads" who slack down, and on those occasions when we have a lost time accident that is permanent or fatal, that brings sorrow to the immediate families and friends, that all the money in the world cannot erase, we realize how much we must keep continually striving and continually working on our safety programs. No company has ever been able to catalog all of the different types of accidents. When we whip some, new ones spring up; and I often think, when we have a bad accident, what would happen if we did not continually press forward on a well organized, well executed safety program; how many more of such accidents would occur—because always, when you analyze the accident and study it, you find either one or two things—negligence in planning the job, or negligence in doing it in a safe manner.

The thought I would like to leave with you is that management should give the same attention to the safety work of their organizations that they give to all the other important problems that must be solved by a business before it can be successful.

If we, through our continual work on safety, can send a greater number of our fellow workers home to their families at the end of their day's work, healthy and able bodied, unmarked by accident, so that they may lead a normal and natural life and they and their families may enjoy the fruits of their labor, we will be discharging one of our major obligations to our corps of workers, and the fulfillment of that will certainly benefit our consumer and our stockholder.

A. S. A. Silver Anniversary Meeting

Henry B. Bryans

HENRY B. BRYANS, executive vice-president of the Philadelphia Electric Company, was elected president of the American Standards Association at the silver anniversary meeting of that organization December 10 at the Hotel Roosevelt, New York City.

"There is much need for work such as the American Standards Association has been doing in the past 25 years," declared President Roosevelt in a telegram to the conference. "The people are looking forward to a richer, better-diffused flow of abundance. Men in industry have already demonstrated their ability to utilize standards as stepping stones to progress. There should be even better opportunities to apply this ability towards advancing the people's hopes after the war."

As if to give point to the President's message, R. E. Zimmerman, vice-president, United States Steel Corp. and retiring president of American Standards Association, announced the formation of an Allied Nations Standards Body. The new body, Mr. Zimmerman explained, would "spark plug" cooperation between the allied belligerent countries in standardization activities as an aid to production and use. A skeleton staff will have offices in London and in either New York or Washington, D. C.

Congratulatory messages were also received from the War Production Board, Office of Price Administration and the standardization organizations of Great Britain, Australia, Mexico, Canada, and other countries.

Representatives of the American Gas Association at the meeting were its official delegate, R. G. Griswold, president, Electric Advisers, Inc., New York; Alexander Forward, managing director, and A. Gordon King, secretary, Technical Section. Among the honored guests at the speakers' table was William J. Serrill, The United Gas Improvement Co., Philadelphia, former A. G. A. representative and a former president of the American Standards Association.

The new president, Mr. Bryans, is a member of the American Gas Association and also a member of the operating committee of the Edison Electric Institute.

The American Gas Association has been an active member of the American Standards Association for a number of years and cooperates fully in its work. The Approval Requirements Committee of the A. G. A. Testing Laboratories is also a Sectional Committee, Project Z21, of the A.S.A. Consequently, the various gas appliance requirements prepared by this group have been adopted as American Standard by that organization. It was estimated a year ago that, of 606 A.S.A. standards developed, 27 were gas industry projects, or approximately 4 per cent of the total.

Mr. Zimmerman in his presidential report reviewed the progress made by the American Standards Association in the twenty-five years of its existence, forecasting for it a still greater role in the future.

H. S. Osborne, chairman of the Standards Council, reported the work of the Association the last year has been "one of great accomplishment," although the 119 standards approved run about 15 per cent below the number adopted in the last two years. The War Production Board, he noted, recently credited standards with having saved 60,000 tons of steel and 17,000 tons of copper.

Army-Navy Contact... *Committee Reports on Use of Gas in Military Establishments*

James W. Carpenter

By JAMES W. CARPENTER*

Chairman, Special Committee on the Use of Gas in Military and Naval Establishments

IN 1938, the rapid expansion of United States Army Posts suggested the need for a committee of the American Gas Association charged with the responsibility of assisting the Army and Navy on matters relating to the use of gas. The committee was formed at that time under the leadership of Thomas L. Kemp, general manager, Citizens Gas & Coke Utility, Indianapolis, Indiana. The committee, however, was not able to carry out its proposed function because the Quartermaster Corps of the United States Army indicated their needs could not be met through committee action. It was also thought difficult at that time to secure the cooperation of Post Commanders. Somewhat reluctantly, therefore, the program was dropped although the committee personnel was kept intact for another year.

Army Fuel Studies

During 1941, it was learned that the Army was engaged in a series of fuel studies, under the supervision of Lt. Col. L. C. McCabe of the Office of Engineers. The findings of this investigation were reported in the magazine "Heating, Piping and Air Conditioning" in January, 1943. They also were adapted for the Army's own use in computing fuel allowances and for estimating gas, coal, and oil requirements for all Army Post uses. Naval establishments have, apparently, not been surveyed in any similar manner and, therefore, it appears that each new installation is set up after a study of the individual circumstances without applying any established unit figures.

Publication of this material led President Arthur F. Bridge of the American Gas Association to reappoint a committee to study and report on Army and Navy use of gas. The objectives of this work were two-fold: first, to provide information leading to the most economical use of gas, and second, to collect data on actual use of gas which would furnish a more accurate basis for future estimates.

Factors Influencing Gas Use

It was self-evident that wasteful use of gas had already led to unduly high unit figures which might have an unfavorable influence upon the continuing and future use of gas. This important point must be emphasized since the present basis for the selection of fuels for Army and Navy use has often been one of arbitrary choice merely selecting what is available in appliances, fuel supplies, and accessory materials. In the post-war period, on the other hand, expediency would be a factor of minor importance, and operating cost and maintenance will become the determining points.

The study of the figures already specified by the Army emphasizes the need for the work of this committee and for the support of the gas industry in carrying out the recommendations which the committee has prepared. Relatively high use figures have been reported by the Army field investigations. The wasteful use of gas was noted in one of the southern Army Corps Areas in particular, and it was traced to high thermostat settings coupled with twenty-four hour operation with the windows and barracks doors thrown wide open. In other cases, high use of gas was traceable to the installation of an excessive amount of gas cooking equipment leading in some instances to gas consumption figures on a per capita basis for bulk cooking greater than the amount of gas required for cooking at home by private families. To be sure, not all Posts showed such results, but the situation is nevertheless sufficiently acute to warrant immediate steps to bring about an improvement.

The Special Committee on the Use of Gas in Military and Naval Establishments has been selected with the Army Corps Areas in mind, and each member of the nine-man committee is expected to serve as coordinator for the Corps Area to which he has been assigned.

Conservation Efforts

At the meeting of the committee held in St. Louis at the time of the American Gas Association Annual Meeting, representatives of the Army and Navy indicated that their primary interest in the efforts of this committee was concerned with conservation. It was pointed out that the Task Committee of the gas industry had already prepared specific recommendations regarding the conservation program under the sponsorship of the Office of War Utilities in which direct reference to military and naval establishments was made as follows:

"I. NATURAL GAS COMPANIES

"Military Establishments

"Utility engineers should contact the proper officers of military establishments to assist them in eliminating all wastes and excessive use for commercial, industrial, and space heating purposes.

"II. MANUFACTURED GAS UTILITIES

"Commercial Customers—Paragraph 3

"Many manufactured gas utilities are now engaged in a cooperative activity with the personnel in charge of Army, Navy, Air Corps and other military camps and establishments in their respective areas looking toward the conservation of manufac-

* Vice-President, Long Island Lighting Company, Mineola, N. Y.

tured gas. The committee recommends that gas companies notify the personnel in charge of the continued availability of trained and experienced gas company engineers whose jobs today are to see that commercial customers get the best possible results from their gas equipment and that all practicable economies are put into operation. Gas utilities generally have special testing equipment and apparatus which can be made available for this purpose."

The present committee feels that the execution of the above recommendations of the Task Committee can best be carried out by furnishing the gas industry with an outline of the way in which one large gas company has carried out the spirit of the recommendations. While each company serving an Army or Navy establishment would naturally modify the procedure in the light of local circumstances, it seems desirable to recommend that careful and serious efforts be made to reduce gas consumptions promptly and effectively not only for the sake of the fuel conservation program which is of immediate importance but for the sake of the long-range improvement in unit figures which will be established by successful reduction in gas consumption. In addition to carrying out procedures along the line indicated in this report, gas companies will benefit through the training of Army personnel in the proper handling of gas equipment. This will tend to lighten the number of calls made upon the gas company for assistance and will be reflected in further operating economies that will have an important good-will effect in the future.

Plan for Action

The step-by-step procedure which follows explains in detail how to get results from contact with an Army Post. Modified for local conditions, this plan can be adapted by all gas companies and should materially aid in carrying out the promises of the Task Committee in regard to conservation of gas.

October 20, 1943

Ref: Letter of September 16, 1943

Re: W.P.B. Request for Conservation Study
Headquarters,
Office of Post Engineers,
————,

Attention of ————

Gentlemen:

As requested under Items a, b, c and d in your letter of September 16, 1943 an inspection and analysis has been made of post distribution facilities, as well as the condition of gas burning equipment at the Fort. The report of our findings is as follows:

(A) Adequacy of Post Distribution Facilities

There is attached to this report a plan of the gas distribution system at the Fort with existing mains shown as solid black lines. Suggested mains to further loop the system, and an additional main into the Fort, taken from a new point of entry, are shown as red lines. Three possible tie-ins to be made at government expense are shown as follows:

	Approx. Length	*Estimated Approx. Cost*
A to B on plan	2400 ft. of 2" pipe @ $1.25	$3,000
C to D on plan	1900 ft. of 2" pipe @ $1.25	$2,375
E to F on plan	2300 ft. of 4" pipe @ $2.00	$4.600

The system within the Fort distributes high pressure gas which is reduced by service governors in each building where gas is used to approximately 6" water column pressure. For this reason, looping of the system, while tending to decrease pressure drops, will not improve the service or efficiency at the gas appliances to any measurable extent. However, the additional suggested supply into the Fort, and the loop connections will furnish the protection of an alternate means of gas distribution.

For purposes of sectionalizing the system to make any needed repairs, the addition of shut-off valves can be made. These additional gate valves have not been shown on the plan as the location and number to be used will depend upon the need for isolating smaller areas than is now possible with the existing shut-offs. The degree to which such isolation is to be carried is a matter for the Fort authorities to decide. It should be remembered that the mains and services are constructed of welded steel pipe which is not readily broken. In many cases leaks not due to severed pipe can be repaired without interruption to gas service.

(B) Operating Condition of Gas Burning Equipment

Mess Kitchens

An inspection of heavy duty cooking and baking equipment was made on October 4th and October 13th. There is attached to this report a list of the repair items required in various mess kitchens. In general, flame adjustments of the heavy duty cooking equipment were found to be good. In a large measure this is due to the immaculate condition in which the ranges are kept. In a number of cases mess kitchen personnel complained of oven thermostats being out of calibration. As the procedure for recalibrating these controls is somewhat lengthy, and because of the travel distance from our central service division, together with the reduction in our manpower, it will not be possible for us to undertake these adjustments. It is suggested that the Fort personnel do this work. Mr. ————, Post Engineer's Office, who accompanied our men on the inspection trip, appears to be familiar with the procedure for oven thermostat calibration.

On four ranges broken oven thermostats were found. This condition was brought about by deep roasting pans which engaged the end of the thermostat element when pans were withdrawn from the ovens. It is prevalent only on Majestic ranges in the busiest kitchens. A protective shield surrounding the end of the element, but not touching it, is suggested. This shield should be devised to allow the pan end to slide over it without catching the thermostat tube.

Bake Shop

There are three Century reel ovens of the indirect heated type in the Bake Shop. A nozzle type burner supplied with partially premixed air and gas from a low pressure centrifugal fan fires into a refractory duct from which flue collectors tying into a duct system distribute heat throughout the oven. Flue gas analyses of carbon dioxide and oxygen and draft gauge readings taken from the combustion chamber and stack indicate a high flue loss from these ovens. The following results were obtained:

(Continued on page 48)

Fresh Out of Gas on Guadalcanal

YOU can't get away from the gas bill—even on Guadalcanal. Such was Elmer's experience. Elmer is the war correspondent hero of a saga by Joseph Driscoll in the December 18 *Saturday Evening Post* entitled "Elmer Covers the War."

Elmer received a month's accumulation of mail one day—mostly bad news.

"Dear sir," the gas company had written, "we regret to inform you that you have neglected to pay your account, which now totals $13.48. Unless we hear from you within ten days, we shall have to discontinue service."

"So you see, guys, I'm fresh out of gas back home in Brooklyn," Elmer explained to his foxhole mates, all of whom had gas masks slung around their necks, ready for instant use, if needed.

Gas was the least of Elmer's worries, however, as he had another missile from the Draft Board in Flatbush saying he was a draft dodger, and, furthermore the Japs were tossing a different kind of missile his way in great numbers.

Despite such difficulties, Elmer forthwith proceeded to rescue a green terror-stricken trooper who ran from his foxhole toward the Japanese lines, and won himself a Purple Heart and a one-way ticket back to Brooklyn.

The story doesn't say whether he paid his gas bill when he got back to Brooklyn.

Administration of Gas Conservation Laws

A SURVEY of the administration of oil and gas conservation laws has been made by the Research and Coordinating Committee of the Oil Compact Commission whose headquarters are in the State Capitol Building, Oklahoma City, Okla. Prepared by the committee headed by Dan O. Howard, of the Oklahoma Corporation Commission, the 70-page mimeographed report was presented at the Winter quarterly meeting of the Compact Commission at Wichita, Kansas, on December 11, 1943.

Little information has been published previously regarding the operation of the state regulatory agencies and this survey has stressed this particular aspect. Organization charts of the oil and gas conservation agencies have been included to show the relationship of the individuals.

Legal history of conservation in the states is covered in a cursory manner as, it is pointed out in the introduction, such history is described in an excellent manner by the Section of Mineral Law of the American Bar Association in its 1938 symposium of eleven papers entitled, "Legal History of Conservation of Oil and Gas."

Gas Measurement Course

THE Southwestern Gas Measurement Short Course which has been held annually until last year, will be resumed in 1944. It will be conducted in the main building of the College of Engineering, on the campus of the University of Oklahoma, Norman, Oklahoma, June 6, 7, and 8, 1944.

The General Committee instructed Earl Kightlinger, Chairman of the Program Committee, to formulate a tentative program to be presented to the group at a meeting which will be held in Oklahoma City in January. It was suggested the morning sessions be devoted to elementary gas laws and the fundamentals of orifice meters, positive meters and regulation. The afternoon sessions, as in the past years, will deal with the fundamentals of regulation.

Various manufacturers will be invited to have exhibits during the school.

Harrison Gas Plant Increases Capacity

IN order to meet increased demand for gas used in its large industrial area, Public Service Electric and Gas Company of Newark, N. J., is making additions to its Harrison, N. J., plant, which is one of the largest carburetted water gas plants in this country.

The production capacity of this plant will be increased through the installation of an automatically operated, self-clinkering, U.G.I. Model "D" Mechanical Generator Carburetted Water Gas Apparatus, waste heat boiler, blower unit and extension to the present generator house, foundations and fuel handling equipment.

Industrial Gas Operations Described at A. S. M. E. Annual Meeting

REPRESENTATIVES of the gas industry took an important part in the sixty-fourth annual meeting of the American Society of Mechanical Engineers which was held Nov. 29-Dec. 3 at the Hotel Pennsylvania, New York City. E. J. Devlin, research engineer of The Brooklyn Union Gas Company, as chairman of the Manufactured and Natural Gas Committee of the Process Industries Division, arranged for the presentation of three papers at the meeting.

The first paper on "Function-Fitted Combustion," by Harry W. Smith, Jr., Selas Company, Philadelphia, was presented jointly with the Heat Transfer Division on Dec. 1. It outlined a new concept of industrial gas utilization which aims at developing the ideal heat application for each heat-requiring operation.

J. L. Whitten, Lee Wilson Engineering Company, Cleveland, spoke at the same meeting on "Radiant Tube Heating Applications." He described the use of gas-fired radiant tubes for bright annealing sheet and strip steel in the large steel mills.

The third paper, "Applying Prepared Atmospheres to Metal Processing," by E. G. deCoriolis, Surface Combustion, Toledo, was presented jointly with the Metals Engineering Division on December 2. In the absence of Mr. deCoriolis because of illness, the paper was read by Dr. John Turin of the same company.

In his paper, Mr. deCoriolis pointed out that most metals require heating at some stage of their processing operations, such as forging, pressing, upsetting, annealing, heat-treating, normalizing, etc. He described characteristics and properties of prepared atmospheres, as well as the types of furnaces developed for creating such atmospheres. Methods were cited for scaleless forging.

C. George Segeler, utilization engineer, American Gas Association, served as chairman of the session on prepared atmospheres which was well attended, primarily by engineering executives of the steel manufacturing, brass, and ceramic industries. There was also a substantial attendance of professors who teach metallurgical subjects.

East Ohio to Build 120-Mile Line

THE Federal Power Commission on December 3 announced its order granting The East Ohio Gas Company, Cleveland, permission to build and operate a 120-mile natural gas transmission line to augment declining natural gas reserves in the Appalachian area. The 20-inch line will extend from an interconnection with Panhandle Eastern Pipe Line Company's facilities at Maumee, in Lucas County, Ohio, to East Ohio's Brush Farm valve station in Summit County, between Akron and Cleveland.

Win Army Industrial Safety Flag

WISCONSIN Public Service Corporation employees found their jobs to be closer to the war effort than they had expected a few days earlier when, in a short ceremony at Wausau, Green Bay and Marinette in December, Major C. S. Melotte, Provost Marshall, and Captain F. M. Wright, Chief of the Industrial Safety Branch of District Two of the Army's Sixth Service Command (Wisconsin and upper Michigan), presented them with an Army Industrial Safety Flag.

Attending the presentations were representatives of the several state organizations interested with the Army Industrial Safety Branch in honoring the successful safety programs.

The sponsoring committee in the state included the Wisconsin Industrial Commission, the Wisconsin Council of Safety and the Wisconsin Manufacturers' Association. A flag similar to the one awarded to Wisconsin Public Service goes to the firm with the best safety record during the first six months of 1943 in each of the six industries in the state. The Public Service award signified its leadership among the utilities of the state during the contest period, having finished the period with a low frequency rate of 3.92 (accidents per 1,000,000 hours worked).

Part of employee group which helped win the white silk-bannered U. S. Army industrial safety flag shown here. A committee of 26 representing 688 years of safe workmanship received the flag. Joseph Befay at right has a 35-year no lost time accident record

Hartford's Rolling Kitchen Unit

HARTFORD'S Rolling Kitchen Unit observed its second birthday on December 12.

Mrs. Irene Kennedy, nutrition consultant for the Home Service Division of the Hartford Gas Company is a First Lieutenant in the unit in charge of nutrition, and is also one of the drivers. This is an activity outside of her regular Home Service duties, and the Hartford Gas Company is proud to have one of its members helping in such a worthwhile war project.

The Rolling Kitchen Unit of greater Hartford was organized December 12, 1941 when the soldiers arrived to guard the Hartford area. All members are volunteers.

Hot coffee and doughnuts were taken in private cars to the gun batteries. An appeal for funds was directed to the Women's Clubs through the Women's Division of the Hartford War Council. Many organizations and individuals contributed generously, making it possible to purchase the "Rolling Kitchen" which was built by the Theurer Wagon Works of New York. It is complete with a four-burner stove, ice refrigerator, sink and cupboards and is equipped for 350 emergency feedings.

In visiting the batteries, the committee found that many small comforts could be supplied to the soldiers such as books, magazines, games, radios, phonographs, records, dishes, card tables, furniture, washing machines, ironing boards and even a barber chair that was procured for one unit.

The Rolling Kitchen rolls out each day to men in and around Hartford and the Rolling Kitchen Unit has rendered valuable service to the Connecticut War Council providing luncheons and refreshments for numerous groups. It has also served the WACS, WAVES and SPARS as well as the men in service.

For two successive years, Mothers' Day cakes were distributed—over 900 in number—to the soldiers in the Hartford area. Christmas and other holiday dinners have been arranged in private homes.

The program of the unit for Christmas 1943 included a party with dancing, a buffet supper, Christmas tree and filled stockings for all the boys in the Hartford area.

During the summer of 1943, the Rolling Kitchen distributed more than 1000 lbs. of home-made cookies and 500 gallons of milk and chocolate milk. A program "Cookies for Rookies" was launched in cooperation with the Home Service Division of the Hartford Gas Company and many of the cookies were baked by teen age girls, members of the Jr. WINS, in their weekly cooking classes at the gas company.

In December, 1942, a canteen was established in the Hartford Railroad Station. Here, coffee and doughnuts or cold drinks and cookies are served to men and women in the armed forces at the rate of 70,000 a year.

Mrs. Kennedy, with a helper for serving, drives the "Kitchen" on a regular route each Saturday afternoon. She supervises the selection and preparation of the food that is served by the unit and conducts special classes in nutrition for its members.

Mrs. Irene Kennedy, nutrition consultant, Home Service Division, Hartford Gas Company, and first lieutenant in the nutrition unit, driving Hartford's rolling kitchen. Picture at right shows the unit in action

Committee to Coordinate Association Research

UPON recommendation of the Special Committee on Organizational Changes, the Executive Board of the American Gas Association at a meeting in New York, Dec. 8 authorized the creation of a Committee on Coordination of Research to be appointed by the President and to include the chairmen of A. G. A. research committees.

The function of the committee will be to maintain a constant review of all Association research and to make recommendations to the Executive Board regarding all research undertakings. It will be especially charged with the responsibility of making recommendations on the relative importance of research items to the Finance and Control Committee prior to preparation of the annual budget estimate.

Departments and Sections of the Association will be requested to contribute to the work of this committee.

At the same meeting of the Executive Board, it was voted to continue the Special Committee on Organizational Changes during the present Association year, with the following membership: J. French Robinson, chairman, Ernest R. Acker, Arthur F. Bridge, and George S. Hawley.

Utilities' Saving of Scarce Materials

FIGURES made public Nov. 24 by the Office of War Utilities reveal huge savings of scarce materials effected by the maintenance, repair and operating supplies provisions of the War Production Board's orders in the U-1 series. The current rate of material consumption for such supplies and minor construction by public utilities represents a curtailment to one-half of the 1940 use of materials for these purposes.

J. A. Krug, director of OWU and program vice-chairman of WPB, pointed out that in addition to this over-all saving, only fifty-five per cent of the material to be used this year will be purchased from manufacturers and distributors, the rest being made up of supplies salvaged and reused and by withdrawals from operators' inventories. Furthermore, Mr. Krug said, no account was taken of price increases since 1940 in calculating amounts of material currently being obtained from suppliers.

Reductions from 1940 material uses for maintenance, repair and operating purposes are as follows:

Electric	$ 66,300,000
Gas	17,000,000
Water	21,000,000
Total	$104,300,000

Of the total, 33 per cent was salvaged from plant, 12 per cent was withdrawn from inventory and 55 per cent was purchased from prime suppliers.

New Home Service Headquarters in Pittsburgh

By H. Briggs, Jr.

THE Equitable Gas Company of Pittsburgh, Pa., recently completed new Home Service Headquarters, where Pittsburgh homemakers can get the most modern information about wartime food and nutrition problems, the rationing point-juggling dilemma, and what to do when the husband unexpectedly brings the "boss" home to dinner.

The opening ceremonies, marked by their simplicity, were attended by heads of local women's organizations; city and suburban gas appliance dealers; executives, sales department heads, and home service directors of other gas companies; editors of women's pages in Pittsburgh newspapers; company officers and employees; and many other interested persons.

Kathryn L. Barnes, home service director for the company, and her staff of experts were on hand to greet the many guests and explain the services offered at the Home Service Headquarters, where homemakers can "talk it over" with experts especially trained in the various problems confronting the women of the house today.

The services offered by Miss Barnes and her capable staff are many and varied, only one of which is the Home Service Representative. Upon request, these representatives will call at the customers' homes to demonstrate gas appliances and to answer questions involving their use and maintenance.

Recipes, usually 16 at a time, are sent every month to all interested customers who request that their names be put on the mailing list. These recipes, all of which have been tested in the home service kitchen, have been well received by the public.

Another service includes work with clubs and societies, educational groups, and cooperative cooking schools. Lecture demonstrations to such organizations are highly successful. Some of the instructors are qualified to conduct the Red Cross nutrition course and will do so by special arrangement.

During the past canning season, the Home Service Department conducted canning schools and lectures on modern methods of food preservation, including home canning, drying and storage of fruits, vegetables, and meats. It is hoped that next year they can extend the same service to many new organizations as well as to those contacted in 1943.

"Party Suggestions" lecture demonstrations are planned to benefit the hostess who is looking for new and unusual party recipes. Booklets on the subject are available to customers who desire them.

Special problem service is performed by mail, phone, home calls, or personal contact in the Home Service Headquarters. Each question is a challenge that members of the home service staff are always eager to accept. Many recipe requests and other questions pertaining to home-making are received by phone and mail, and are given immediate attention.

The Home Service Headquarters' test kitchen is arranged to accommodate small groups for demonstrations and classes. Every recipe is developed or tested in the kitchen before being released to the public. Food preparation for demonstration and display is also done in the test kitchen.

Miss Barnes has had wide experience and broad training as a home service director. She majored in home economics at State Teachers' College, Buffalo, N. Y., and gained practical experience with the Iroquois Gas Corporation in that city. Before going with the Equitable Gas Company in March 1943, she was home service director for the Pennsylvania Gas Company of Erie, Pennsylvania.

Staff of Home Service Division of the Equitable Gas Company, showing also the new model kitchen just built. Left to right: Mrs. Viola Doyle, Anne Gallagher, Jenoise Wherry, Kathryn L. Barnes, Jean Burch, and Gene Lydick

Gas company officials inspect new Home Service headquarters. Left to right: Kathryn L. Barnes, home service director; F. B. Jones, general sales manager; P. A. Fleger, senior vice-president, Philadelphia Company, and president, Pittsburgh & West Virginia Gas Company; D. P. Hartson, vice-president and general manager, Equitable Gas Company

New Home Service headquarters of the Equitable Gas Company, Pittsburgh. In the foreground is a reception room where customers are greeted, and receptionist makes inquiries as to their exact problems. In the rear is the test kitchen with seating accommodations for 25 women, where small groups can be given demonstrations. The stairway on the right leads to the second floor offices

Harrisburg's Victory garden food conservation kitchen located in the basement of Congressman John C. Kunkel's home in which more than 3500 jars of food were canned and tested. The Harrisburg Gas Company, through Miss B. Madalynne Dolph, home service director, cooperated in the project which was under auspices of the County Defense Council. Kitchen equipment included three large gas ranges and a number of pressure cookers, with which it was possible to can 250 jars of food daily. In the picture are, left to right: Mrs. Stanley Smith, Congressman Kunkel, Mrs. Margaret Gilbert, Miss Dolph, Mrs. Julia Moore, and J. C. Bolin, Washington supervisor of Victory Garden Kitchens

NEW MEMBERS OF THE A.G.A.

GAS COMPANY

	Delegates
Amere Gas Utilities Co., Beckley, W. Va.	W. M. Reeser

MANUFACTURER COMPANIES

American Gas Machine Co., Albert Lea, Minn.	E. H. Stempel
The Sparks-Withington Co., Jackson, Mich.	Jerome C. Maxfield
Timken Silent Automatic Div., Detroit, Mich.	T. A. Crawford
Western Stove Co., Culver City, Calif.	Henry Honer
Williams Oil-O-Matic Heating Corp., Bloomington, Ill.	W. A. Matheson

ASSOCIATE COMPANY

F. L. Putnam & Co., Inc., Boston, Mass.	J. F. Graham

INDIVIDUAL MEMBERS

Richard W. Alexander	Pacific Gas & Electric Co., San Francisco, Calif.
Arnold E. Altenhofen	Milwaukee Gas Light Co., Milwaukee, Wisc.
Margaret Woodman Andersen	Michigan Consolidated Gas Co., Grand Rapids, Mich.
Ferd C. Arens	Pittsburgh Equitable Meter Co., Boston, Mass.
Edw. J. Baechle	The Stacey Manufacturing Co., Cincinnati, Ohio
Burnett G. Bartley	Wittmer Oil & Gas Corp., Pittsburgh, Pa.
R. R. Chapman	Roper Sales & Service Co., Chicago, Ill.
Clyde L. Cleaver	Interlake Iron Corp., Cleveland, Ohio
A. M. Cramer	Jas. Graham Mfg. Co., Newark, Calif.
Wilbur W. Criswell, Jr.	United Eastern Coal Sales Corp., New York, N. Y.
Richard Darlington	Pennsylvania & Hudson Co., Philadelphia, Pa.
Thos. J. Davidson	Rheem Manufacturing Co., Bell, Calif.
Carl W. Dornbach	Milwaukee Gas Light Co., Milwaukee, Wisc.
A. E. Englebright	Ebasco Services Inc., New York, N. Y.
Paul J. Fitzpatrick	Pacific Gas & Electric Co., San Francisco, Calif.
John F. Foster	Battelle Memorial Institute, Columbus, Ohio
Slade B. Gamble	Lindberg Engineering Co., Chicago, Ill.
Theodore R. Goebel	Shell Oil Co., Inc., Houston, Texas
C. S. Green	New Orleans Public Service Inc., New Orleans, La.
T. M. Hohl	Dept. of Public Utilities, Colorado Springs, Colo.
John M. Hollingsworth	Iowa-Illinois Gas & Electric Co., Davenport, Iowa
H. B. Hummell	Wausau Gas Co., Wausau, Wisc.
William B. Kice	Colorado Interstate Gas Co., Colorado Springs, Colo.
William Laverty	Cambridge Gas Light Co., Cambridge, Mass.
Peter B. Lilly	The Newark Consumers Gas Co., Newark, Ohio
W. L. Lyon	Gas Consumers Association, So. Norwalk, Conn.
Thomas J. Lyons	Springfield Gas Light Co., Springfield, Mass.
S. F. McCallister	Manchester Gas Co., Manchester, N. H.
Edgar W. Meyers, Jr.	Pittsburgh Equitable Meter Co., Pittsburgh, Pa.
Lawrence J. Mooney	The Hartford Gas Co., Hartford, Conn.
Stuart H. Nichols	Iroquois Gas Corp., Buffalo, N. Y.
Douglas M. Norris	Stone & Webster Service Corp., New York, N. Y.
W. E. Parrott	Ebasco Services Inc., New York, N. Y.
Lester E. Reynolds	The Connecticut Light & Power Co., Hartford, Conn.
Ello E. Richardson	Cambridge Gas Light Co., Cambridge, Mass.
Willard F. Rockwell, Jr.	Pittsburgh Equitable Meter Co., Pittsburgh, Pa.
W. O. Smith	Southwest Natural Gas Co., Ada, Okla.
Caldwell B. Spates	Westchester Lighting Co., Mt. Vernon, N. Y.
Edward N. Strait	Public Utility Engineering & Service Corp., Chicago, Ill.
Roy L. Thomas	Colorado Interstate Gas Co., Colorado Springs, Colo.
Harold T. Welling	Pacific Gas & Electric Co., Oakland, Calif.
John I. Yellott	Institute of Gas Technology, Chicago, Ill.

A. G. A. Committee on War Activities

THE American Gas Association's Committee on War Activities, which made such an important contribution to the gas industry's war effort during the past year, will consist of the following personnel during the current Association year:

J. French Robinson, The East Ohio Gas Co., Cleveland, Chairman; Walter C. Beckjord, Columbia Gas & Electric Corp., New York; Arthur F. Bridge, Southern Counties Gas Co., Los Angeles; Harry R. Cook, Jr., Consolidated Gas Electric Light & Power Co. of Baltimore, Baltimore; E. H. Eacker, Boston Consolidated Gas Company, Boston; Harry D. Hancock, Gas Advisers, Inc., New York; E. P. Noppel, Ebasco Services, Inc., New York; Marcy L. Sperry, Washington Gas Light Co., Washington; Ernest R. Acker, Central Hudson Gas & Electric Corp., Poughkeepsie, *ex officio;* J. W. West, Jr., American Gas Association, Secretary.

Sergeant Wimpy

Sergeant Wimpy and recruit

SERGEANT WIMPY, Boston terrier owned by John P. Chenoweth of the United Fuel Gas Company, Charleston, W. Va., is barking eloquently these days in the cause of the United Nations. He is shown above enlisting the services of Mike, who belongs to Carl J. Haney of Charleston, in the Dogs for Defense campaign.

Appointed by James M. Austin, War Dog Fund, 250 Park Avenue, New York City, to act as recruiting officer in the Charleston region, Sergeant Wimpy was the first dog in Charleston to join the Army. He has been eminently successful in recruiting Dogs for Defense and has provided the names of several large dogs who have qualified and have been accepted by the Armed Services.

Sergeant Wimpy wears his Sergeant's stripes and U. S. Army Recruiting Service insignia with great dignity. Naturally, he is an object of great interest and is probably the best known dog in his locality.

Personal AND OTHERWISE

Baxter Heads Arkansas Western Gas

L. L. Baxter

L. L. BAXTER, of Fayetteville, Arkansas, vice-president of the Arkansas Western Gas Company since 1936, has been named president.

His selection was announced following the setting up by the company of a new board of directors in compliance with an SEC order. Other members of the board of directors are: Clint Murchison, of Dallas, Texas, chairman; John Cain, also of Dallas, E. W. Cook, of El Paso, Texas, and Marion Wasson, of Fayetteville, Arkansas.

Mr. Baxter came to Fayetteville from Dallas in 1932 as district manager and since has been prominently identified with various civic and public affairs. At the present time, he is secretary-treasurer of the Southern Gas Association, in which capacity he has served since March, 1940.

New A. G. A. Director

N. R. Feltes

N. R. FELTES, vice-president of Bastian-Morley Company, Inc., La Porte, Indiana, was elected to the Executive Board of the American Gas Association at a meeting of the Board on Dec. 8. He fills a vacancy caused by the resignation of Watson E. Derwent who recently retired as vice-president of George D. Roper Corp.

Mr. Feltes has been executive vice-president and director of Bastian-Morley Co., Inc., since 1933. He was president and director of N. R. Feltes & Co., Chicago, from 1928 to 1933 and for ten years previous had been treasurer and director of the Studebaker Corp., South Bend, Ind. Prior to that time he had been associated successively with Morgan & Wright, Detroit, a U. S. Rubber subsidiary; Losier Motor Co., Detroit; and Ames Holden McCready, Montreal shoe manufacturers.

He has been active in the Association of Gas Appliance and Equipment Manufacturers, serving for two years as a director and as chairman of the Policy Committee. He is now serving as a director of the Plumbing and Heating Industries Bureau, Chicago.

Mr. Feltes has been president of American Trust Co., South Bend, since 1935; director of Electric Spraylit Co., Sheboygan, Wisc., since 1928, and director of Campbell, Wyant and Cannon Foundry Co., Muskegon, Mich., since 1942.

Hanlan Honored

A DIAMOND-studded gold badge commemorating fifty years' service with Public Service Electric and Gas Co. and predecessor companies was presented November 22 in Newark to James P. Hanlan, gas sales manager. The presentation was made by President Edmund W. Wakelee. Mr. Hanlan completed fifty years' service on November 1.

Starting in the utility business in 1893 as an office boy for the United Gas Improvement Company in Hudson County, Mr. Hanlan, during the earlier years of his career worked his way up through the ranks holding such positions as Cashier, Head of the Collection Department, and agent, Hudson County District.

During the latter part of his career with Public Service, Mr. Hanlan has held the positions of assistant to the vice-president in charge of sales and assistant general sales manager. In January, 1935, he was made sales manager.

Five Blackstone Valley Employees Honored for Saving Life

CHARLES F. ST. SAUVEUR and four fellow employees of the Blackstone Valley Gas and Electric Company, Woonsocket, R. I. received national recognition recently for their outstanding life-saving efforts when they were selected for McCarter awards and commendation by the American Gas Association. Mr. St. Sauveur won the McCarter medal; Edward J. Kelley, Jr. and George Hodkinson were awarded McCarter certificates of assistance, and Arthur Bilodeau and Roy Laflamme received letters of commendation from the Association.

The participants in the rescue of a North End victim of asphyxiation were honored at a dinner-entertainment program at the Hotel Blackstone on November 23. All employees of the Woonsocket division of the company were invited to the ceremony and approximately 185 were present. H. L. Pearson, of the Blackstone Valley company, acted as toastmaster and P. J. Rempe, division manager of the Stone & Webster Service Corp., Boston, presented the awards.

"It surely is an occasion for thanksgiving when we can decorate men, not for killing their fellow men, but for saving them," Mr. Rempe declared in making the presentation.

David Daly, president of the Blackstone Valley Gas & Electric Co., congratulated the men and termed their achievement "representative of the best traditions of this country." Other speakers were: Rollin Buckminster, vice-president; Lester H. Knapp, vice-president; William McGregor, vice-president; J. W. Kelly, treasurer; C. L. O'Loughlin, superintendent of gas operations, Woonsocket; and George Waddington, safety supervisor.

Employees of the Blackstone Valley Gas & Electric Co. receiving McCarter awards. Left to right: Roy A. LaFlamme, citation; David Daly, president; Edward J. Kelley, Jr., certificate of assistance; Charles F. St. Sauveur, medal; H. L. Pearson, manager, Woonsocket Div.; P. J. Rempe, division manager, Stone & Webster Service Corp.; George Hodkinson, certificate of assistance; A. J. Bilodeau, citation

Bureau of Mines Employees Cited for Natural Gas and Petroleum Work

William M. Deaton

RECOGNIZING the outstanding assistance given the petroleum and natural gas industries by three veteran employees of the Bureau of Mines, Secretary of the Interior Harold L. Ickes on December 4, 1943, granted them Awards of Excellence for their contributions to wartime services rendered by the Department on the home front.

The employees, all members of the Bureau's Petroleum and Natural Gas Division, are William M. Deaton, senior chemist, 1117 Broadmoor, Amarillo, Tex.; Ellis M. Frost, Jr., chemical engineer, Shiprock, N. M., and Harold C. Miller, senior petroleum engineer, 6109 Contra Costa Road, Oakland, Calif. Mr. Deaton and Mr. Frost will receive annual salary increases of $200 each. Mr. Miller, who is at the top of his Civil Service grade, will be recommended for a job reclassification upward.

E. M. Frost, Jr.

Develop Dew-Point Apparatus

Harold C. Miller

The war has limited the construction of new pipe lines for natural gas, but likewise has caused an enormous increase in demands for the fuel. As a result, existing lines are operated at higher pressures and the danger of gas hydrates thus has grown. These chemical compounds of natural gas and water formed under pressure produce ice-like constrictions which decrease or even stop the flow of gas. Mr. Deaton and Mr. Frost developed a simple, practical, and reliable device which determines the temperature at which natural gas hydrates will condense from natural gas under pressure. Gas transmission companies now are able to make frequent tests of the efficiency of gas dehydration plants in removing water vapor from gas before it enters the pipe lines, thus avoiding serious interruptions.

Between 100 and 150 of these instruments are in use and their "insurance" value is incalculable. They are suitable for pressure from atmospheric to 2,500 pounds per square inch. Since the Government has shop rights on the dew point apparatus, without royalty, the device also has been of considerable monetary value to Federal agencies. Government use of the apparatus in connection with helium production for the war has been extensive and it has enabled the production of natural gas and helium extraction to be carried on without interruption.

Miller's Achievement

The efficiency of recovery of oil from underground pools depends largely on the manner in which reservoir energy is used to move oil through the reservoir sands and porous rocks to the wells. To determine whether a slowing down or a speeding up of the rate of recovery increases (or decreases) the efficiency of recovery, a yardstick is needed to guage the relative recovery efficiency following changes of field operation. Mr. Miller's work has made it possible to develop such a yardstick.

CONVENTION CALENDAR

1944

FEBRUARY

Feb. 9-11 American Management Association
Chicago, Ill.

17-18 American Gas Association Technical Conference on Domestic Gas Research
Cleveland, Ohio

MARCH

Mar. 6-7 Southern Safety Conference
Atlanta, Ga.

22-23 Southern Gas Association
Roosevelt Hotel, New Orleans, La.

30-31 1944 American Gas Association War Conference on Industrial and Commercial Gas
Rochester, N. Y.

APRIL

Apr. 3-5 American Society of Mechanical Engineers
Birmingham, Ala.

10-12 National Association of Corrosion Engineers
Rice Hotel, Houston, Texas

MAY

May 8-11 National Fire Protection Association
Philadelphia, Pa.

24-25 American Management Association
New York, N. Y.

JUNE

June 6-8 Southwestern Gas Measurement Short Course
University of Oklahoma, Norman, Okla.

19-22 American Society of Mechanical Engineers
Pittsburgh, Pa.

On A. G. A. Finance and Control Committee

James A. Brown

THE following members of the Finance and Control Committee of the American Gas Association were re-elected by the Executive Board at its Dec. 8 meeting: James A. Brown, Commonwealth & Southern Corp., New York, chairman; George S. Hawley, president, Bridgeport Gas Light Co., Bridgeport, Conn.; Frank H. Lerch, Jr., president, Gas Companies, Inc., New York; and P. S. Young, chairman of Executive Committee, Public Service Electric and Gas Co., Newark, N. J.

After constitutional amendments have been adopted, the two vice-presidents of the Association will also be members ex-officio.

Wins McCarter Award

GEORGE MITZEL, serviceman in the Customers' Service Department of The Philadelphia Gas Works Company, was recently awarded a McCarter medal and certificate for his outstanding act of life saving by application of the Schafer prone pressure method of resuscitation. The presentation was made November 23 at a staff meeting of President Hudson W. Reed.

A. E. Lindquist Dies

ALBERT E. LINDQUIST, publisher of *Gas Age* and secretary of Robbins Publishing Company, died unexpectedly following a heart attack December 5. He would have been 51 years of age on December 15. He had been associated with Robbins publications for 22 years.

Men Who Will Lead Accounting Section in '44

O. H. Ritenour
Chairman,
Accounting Section

C. E. Packman
Vice-Chairman,
Accounting Section

L. A. Mayo
Chairman,
Advisory Committee

Leith V. Watkins
Coordinator,
General Accounting
Activities Group

J. J. Natale
Coordinator, Customer Accounting
Activities Group

H. C. Hasbrouck
Chairman, Depreciation Committee

L. E. Reynolds
Chairman, General Accounting Committee

E. S. Brock
Chairman, Materials & Supplies Committee

A. M. Hartogensis
Chairman, Property Records Committee

H. D. Heiby
Chairman,
Taxation Committee

Henry J. Johnson
Chairman, Customer Accounting Committee

H. S. Hahn
Chairman, Customer Collections Committee

W. G. Murfit
Chairman, Customer Relations Committee

A Training Program for Supervisors

By WILBUR M. MCFEELY

Public Service Electric & Gas Company, Newark, N. J.

THOSE who have followed developments in the field of training have witnessed during the past two years a new approach to the problem of supervisory training. Prior to the war, foremen and supervisory training programs were concerned principally with but two of the basic needs of the supervisory force: (1) a knowledge of the work, and (2) a knowledge of responsibilities.

These two areas of knowledge are, of course, so fundamental to effective supervision that they must remain as an important part of any integrated training program. In fact, such programs today are designed not merely as courses of instruction, but also as media for the continuous exchange of ideas that are essential to creative cooperative action. Thus, such programs have outgrown their purely instructional function and have become an effective management method for the control and direction of the organization.

Specific Supervisory Skills

Out of the war experience, however, there has come the realization that a supervisor needs certain specific skills that are rarely acquired in the normal routine of a non-supervisory job. Moreover, these skills are seldom learned in the understudy plan of developing foremen, which most companies relied upon so heavily for producing competent supervisors. They are skills which must be acquired by practice and learned by doing, just as an accountant, meter reader, or machine operator acquires his skill. Certainly, among the most important of these skills are:

1. Skill as an instructor, that is, the ability to get an idea across to another with the least expenditure of time and effort on the part of both the supervisor and the one being taught. An analysis of a supervisor's responsibilities will show that few, if any can be carried out without some instruction being given to another.
2. Skill as an organizer or planner; that is, the ability to analyze job methods and to effect improvements in procedure, as well as to apportion the work fairly among the personnel, and to set standards of quantity and quality of output.
3. Skill as a leader; that is, the ability to get people to work together harmoniously toward the fulfillment of the objectives of the business, or the ability to build into a group what has been termed the "discipline of consent."

No two companies are alike. Because of this fact, it is impossible for anyone who is unfamiliar with the traditions and organization of a company to suggest, with any degree of assurance, the training program that will produce the desired results. It is not, then, with the thought that there is any one "right answer" that the following summaries of two training projects are offered. They are intended only to review two successful approaches to the problem of developing supervisory skills, and, hence, of increasing the effectiveness of the supervisory personnel. Both of these programs were conducted by the educational staff, which functions under the direction of the Committee on Educational Work.

Training in Skill of Instruction

Since the skill of giving instruction plays such an important part in supervision, this subject comprised the first part of our supervisory training. The objectives of this phase of the program were: an understanding of the need for good instruction; familiarity with the methods of good instruction; and the acquisition of some skill in instructing.

Six two-hour meetings were devoted to this phase of the program. At one meeting, the nature of individual differences and the fundamental laws of learning were demonstrated and discussed. At another a basic pattern for individual instruction was presented and analyzed. In a third meeting, the value and technique of making job breakdowns was considered. The remaining meetings were devoted to practice demonstrations of job instruction, followed by criticism and discussion. To provide adequate time for all demonstrations, it is advisable to limit the size of the group to 12 to 15 members. The full program is an adaptation of the Job Instructor Training program of the Training Within Industry Service.

All Assistant Commercial Managers and departmental supervisors received the training. In addition, the training was given to those employees to whom the job of instructing is frequently delegated. The purpose, of course, was to provide training to all who give instruction, and to their supervisors.

Recognizing that a training program of this sort can be of value only to the extent to which its principles are put into practice, the Educational Department has been following up this work. Out of this follow-up, one definite need was revealed—the necessity for assisting supervision in the preparation of job breakdowns for teaching purposes. This work is now in progress, particularly for entrance positions. The operations involved in the job have been studied, written down, and arranged in the best sequence for teaching purposes. A basic pattern established for one office is quickly adapted to fit slight variations in the operation at another office.

The job breakdowns or training outlines serve as a guide to the instructor in the training of a new employee. The outlines indicate to him what should be covered and in what sequence. Their use encourages the giving of instruction in an organized manner rather than "hit or miss." After the learner has been taught the job, he may use the outlines as a reference.

It has been found that the job breakdowns have value for uses other than that of training new employees. As a re-training device, they serve as a standard to which employees who have deviated from established procedures may be directed. And, certainly, they may be used as a base for studying procedures with a view toward determining the "one best" way of doing a particular operation. The availability of the job breakdowns for other useful purposes contributes to the value of spending the time on their preparation.

Leadership Training

The description of the training program in supervisory leadership that follows has proved adaptable to a variety of training situations. First, it is applicable to management personnel at any level in the organization. Second, without changing the basic pattern of the program, any particular phase of the subject content may be discussed as intensively as required by the needs of the group. Third, visual materials, such as films, may be readily incorporated into the program where the necessary equipment is available. Fourth, because it is almost wholly conducted on a conference-discussion basis, the relationship of "teacher" and "student" is absent almost entirely. This latter fact is of extreme importance in this kind of training, because leadership can never be an exact science; hence, most foremen and executives believe themselves to be experts in the field, and, in fact, they are, but in varying degrees. There is consequently a natural resistance to "going to school" to be "lectured to" on supervisory relationships.

The foregoing considerations led to an adoption of the "case study" as being the most satisfactory vehicle for introducing the subject material. This conviction was further strengthened by the fact that previous experience with programs in which case studies were not used proved that it was relatively easy to get a general acceptance of the principles underlying good leadership. The difficulty is that the application of such principles to specific situations is not so easily determined. The supervisor,

(Continued on page 46)

Presented at American Gas Association Annual Meeting in St. Louis, Mo., October 26-28, 1943

Housing Committee Makes War Contributions

Leon Ourusoff

AN important factor in helping the gas industry to fulfill its war responsibilities in the vital field of housing has been the work of the Housing Committee of the American Gas Association. Under the chairmanship of Leon Ourusoff, Washington Gas Light Co., Washington, D. C., this committee has worked with government housing agencies, the building industry and the gas industry to solve unprecedented war problems.

With thousands of workers shifting to war production centers immediately before and after Pearl Harbor, many housing problems had to be solved in the face of material shortages and government restrictions necessitated by the war. Appliance and housing standards had to be set up and the most economical utility services installed in federal and private housing projects.

Pattern of War Housing

During this critical period, it was important that gas appliances and gas service be effectively utilized in contributing to the war effort. The Housing Committee kept its finger on the pulse of war building, collected reliable data, and prepared comprehensive analyses for the guidance of government agencies. At the same time it kept the gas industry informed of new developments in this field.

Indicative of the importance of this activity is the fact that 440,000 new war-housing family units were constructed under the NHA program in 1943 and that about 75 per cent of privately financed units were served with gas while this percentage was much higher in units financed publicly.

With the pattern of war housing set, the committee last year devoted some attention to problems related to new housing in the post-war period. It is proposed this year to expand the committee's membership and to set up subcommittees to cover the following assignments.

1. Contact and planning with housing agencies
2. Contact and planning with architectural bodies, builders and prefabricators
3. Collection of project utility data
4. Determination of service costs for housing projects
5. Appliance and installation standards
6. Distribution of promotional and technical material to building industry

These projects will be fully developed so that the gas industry will be prepared for post-war eventualities.

The following summary of 1943 activities was presented by Chairman Ourusoff at a meeting of his committee in St. Louis:

Housing Standards

After conferring with WPB and NHA, the Committee presented a recommendation pertaining to the revision of certain portions of "Housing Utility Standards," particularly to the advisability of allowing higher peak demand factors for purposes of distribution design. In January 1943, NHA issued new standards in which upwardly revised peak demand factors were incorporated.

Material

The committee was consulted on matters relating to the selection and use of steel and cast iron pipe for gas supply to housing projects.

Practices

In collaboration with American Gas Association Headquarters, helpful information was transmitted to Federal Public Housing Administration regarding improvement of installation and inspection practices to avoid occurrence of defects in distribution systems installed by contractors.

Utility Services

Early this year, the Association completed its "Study of Utility Services for War Housing" and released it in printed form. This comprehensive analysis of the critical materials involved in the installation of gas and competitive facilities for cooking, water heating, refrigeration and space heating, the committee transmitted and explained to interested government departments and agencies.

Appliances

Certain questions came up this year in connection with A. G. A. approval of appliances and government specifications. In concert with A. G. A. Headquarters, the committee discussed the matter with and presented pertinent facts to appropriate war agencies.

Liberalization of Mortgages

The "Architectural Forum" has been conducting meetings in New York and Washington to which builders, appliance manufacturers, and utility associations were invited. The A. G. A. was represented through the Housing Committee. The majority of those attending were members of electrical appliance manufacturing firms. "Architectural Forum" is seeking the support of this group in an endeavor to obtain liberalization of FHA policies relating to inclusion of appliances and accessories in cost and value estimates. A statement to this effect is being drafted now by "Architectural Forum" for presentation to FHA. The statement will be submitted to the group for comments and endorsement prior to presentation. The committee will act on the matter at the appropriate time and in accord with advice received from the A. G. A.

Collection of Utility Data from Projects

A great deal of valuable data on operating costs of utility services is now available at FPHA. This data has not yet been analyzed. A subcommittee, headed by Frank H. Trembly, has been of great assistance to FPHA in studying methods for the proper tabulation of this information. A form entitled "Project Utility Usage Data" has been prepared by the subcommittee in collaboration with the Technical Division of FPHA. It is hoped that tabulation will start early in 1944. The establishment of operating cost data based on facts is very important and should be of great value to the gas industry in the post-war period.

Home Service Assists OPA Rationing

GAS company home service departments, through a report to the War Advertising Council, have played an active part in the formulation of government food rationing plans. The War Advertising Council was formed early in 1943 as a co-operative effort of advertising agencies to lend the assistance in publicizing the activities and programs of war agencies. In March, a Women's Advisory Group was formed with the appointments made to have as wide as possible a representation of contacts with women throughout the country. Home service work in the gas industry is represented on this Women's Ad-

visory Group by Jessie McQueen, American Gas Association Home Service Counsellor.

In October, a very special assignment was given to this Women's Advisory Group to evaluate and criticize constructively the strategy of the fall plans of the Office of Price Administration as it relates to rationing. Home service departments representing the various regions of the country were called upon to poll representative women's organizations and other contacts on a set of questions to find out their opinions and suggestions as to how to make rationing and price control effective and palatable.

On the basis of detailed and specific recommendations secured from twenty-six gas companies, it was realized how effective is the strong link between home service departments and women in the community in securing a picture as to what women are thinking about, what they would like to know about rationing, and what additional kind of information will prove most helpful to them. The War Advertising Council in pooling the reports of all members of the committee submitted a set of 91 questions or suggestions to Chester Bowles, Administrator of the Office of Price Administration. Of this number, 45 were those reported by home service.

Home Service Nutrition Center

New "Nutrition Center" of the Lynn Gas and Electric Company, Lynn, Mass., which is being promoted since the utility's cooking class program is curtailed. Up-to-the-minute food information is on display in the scrap book on the left display platform. A poster advertising the home Volunteer Program and counter space for a dehydrated foods exhibits occupy the right side. A number of free Home Service booklets are offered as well as free receipe sheets. Florence A. Mooney is home service director.

New Study Shows Population Shifts

THAT significant changes in the geographic distribution of the American people and of their economic activity have resulted from conversion to a war economy is shown in a study entitled "Regional Shifts in Population, Production, and Markets—1939-43," released today by the U. S. Department of Commerce.

The center of gravity of American economic life has shifted markedly Westward and Southward during the war as indicated by the dramatic rise in the relative position of the Pacific, South Atlantic, and East South Central regions and by the relative decline of the populous Middle Atlantic region.

The study shows that the over-all shift from areas of relative loss to those of relative gain in economic importance has affected from 2 to 5 percent of our total economic activity. For example, the net shift in civilian population from regions which have experienced a relative loss to those which have enjoyed a relative gain represents about 2 percent of the total population, or approximately 2,500,000 persons. The net shift in income payments, on the other hand, amounts to nearly 5 percent of the national total or more than $5,000,000,000.

It is revealed by the study that, on the whole, the wartime program of new capital investment has tended to bring about a geographic diffusion of American industrial plant. The rising industrial importance of some areas represents the acceleration of long-term trends. Even before the war, new investment was flowing into the less industrialized regions more rapidly—relative to the amount of manufacturing already located there—than into the New England and Middle Atlantic States. Whether the relative gains in industrial importance made by some areas during the war will hold in the post-war era depends, in large measure, upon the extent to which war production facilities can or will be converted to civilian output, as well as upon the timing of conversion.

Prepared by K. C. Stokes of the Business Structure Unit, Distribution Division, Bureau of Foreign and Domestic Commerce, the statistical series shown in the report include data, by regions and states, on war output, population, employment, income payments, number of operating business firms, bank debits, consumer spending, and electric power consumption.

In a foreword, Dr. Ames E. Taylor, Director of the Bureau of Foreign and Domestic Commerce, says:

"Such data have been requested by business firms to be used in analyzing markets and in planning wartime distribution activities. War agencies have also requested these data for use in setting up regional administrative organizations and in allocating scarce commodities. Furthermore, the study is generally useful to indicate the effect of the war upon the location of economic activity, to suggest the probable extent of wartime dislocations, and to identify 'problem areas.'

"Additional studies showing more detailed changes in the economic map of the United States, with data by cities and counties, are planned."

Sorenson to Speak

C. V. SORENSON, chairman of the Residential Section, American Gas Association, and chairman of the A. G. A. Post-War Planning Subcommittee on "Post-War Purchasing Power and Potential Markets" will speak January 17 at the National Retail Furniture Association's meeting in Chicago. His topic will be "Utility-Furniture Dealers' Cooperation."

He will represent the Association and its Post-War Planning Committee.

Council Elects Canniff

ROBERT J. CANNIFF, of Evansville, Ind., sales promotion and advertising manager for Servel, Inc., has been elected vice-president of the National Noise Abatement Council, it was recently announced in New York by S. L. Hooper, of Washington, D. C., president of the organization.

The Gas Meter

THE gas meter invented by William Richards in 1844 has undergone no marked changes in principle in the approximate 100 years of its existence. Hundreds of inventors have tried to perfect a better gas measuring device—but without success. —*L. W. Tuttle,* Oak Park, Ill.

Industrial & Commercial Gas SECTION

CHARLES G YOUNG, *Chairman*
HARRY K WRENCH, *Vice-Chairman*
EUGENE D MILENER, *Secretary*

Food Service Equipment in the Post-War Era

By ROY E. WRIGHT*

Chairman, Food Service Equipment Committee, Industrial and Commercial Gas Section

WHY do we have a post-war plan in the food service field? Everyone is working on a post war plan. Has the food service post-war plan been prepared just to be in style? Just to give the committee something to do? Just to give the commercial salesmen something to do?

No! It has been developed to preserve and expand one of the most important, one of the basic, one of the most profitable, and one of the most vulnerable loads of the gas business. The present cooking equipment is rapidly wearing out. After the war thousands of hotels, restaurants, and institutions will need new appliances. What we do *now* will determine what fuel they choose then. We have no financially strong manufacturers to do the job for us. We must do it ourselves.

We all have been guilty of losing a job here and there all too frequently. Unfortunately we have not worried too much about it. Sometimes we don't like to talk about it. Each job lost gives our competitors a renewed stimulus. Each job lost makes our sales resistance that much tougher. A job lost to our competitors in St. Louis eventually effects and increases our sales resistance in New England.

Commercial Cooking Facts

Just how important is the commercial cooking load? Let us look at the facts by analyzing some A. G. A. statistics:

1. Commercial gas sales were 59,397,500 MCF
2. This represents 13.4% of the total gas sold
3. $40,675,300 of revenue was added through commercial sales
4. This represents 12.3% of the total revenue added
5. The average commercial rate was $.856 per MCF
6. The average domestic rate was $1.312 per MCF
7. The average house heating rate was $.645 per MCF
8. The average industrial rate was $.451 per MCF

In Natural Gas Areas in 1942—

1. Commercial sales were 154,512,200 MCF
2. This represents 8.7% of the total gas sold
3. $65,262,000 of revenue was added through commercial sales
4. This represents 11.2% of the total revenue added
5. The average commercial rate was $.422 per MCF
6. The average domestic rate including house heating was $.660 per MCF
7. The average industrial rate including power generation was $.179 per MCF

There are approximately 250,000 eating establishments in this country which contribute to this load. Considering the limited investment, the small overhead needed to supply these accounts, the steady all-day year-round gas load, the large size of the average account and the high average rate, this is a highly desirable business for every gas company. This is one load that should increase instead of decrease after the war. A number of restaurants are now closed due to the gasoline shortage, food rationing, limitations on equipment, and scarcity of manpower. Many of these restaurants will reopen after the war and many new ones will start up because an ever increasing number of people will eat out more and at home less.

The food service cooking load is our most vulnerable load. It is vulnerable for the same reason that the electric commercial lighting load is vulnerable; the rates are too high for the size of the individual customer consumption. We all know that the electric industry (particularly the manufacturers) is spending thousands of dollars *now* on research and sales planning to take the commercial and domestic cooking load away from us. They are making a survey of the industry *now*. These electric men plan and work on the premise (and actually believe) that the future of the domestic and commercial gas load will be in the basement. This means that they actually believe that they will drive us out of the kitchen.

Cook examining delicious fried food from hotel-style gas deep-fat fryer

* New England Gas and Electric System, Cambridge, Mass.

Presented before Industrial and Commercial Gas Section, American Gas Association Annual Meeting, St. Louis, Mo., October 26-28, 1943.

Battery of large capacity modern gas hotel ranges, broiler, griddles and short-order stoves

At the meeting in Detroit last March, I emphasized the danger of electric competition. That night at dinner a friend of mine from a combination company took me to task. He said that my fears were over-exaggerated and that I overrated electric competition. Men from combination companies do not know what electric competition is. By refusal to make attractive electric rates or to actively promote electric equipment, they can control electric competition at least temporarily, until the electric man can build up a public acceptance for his product. Then the combination company will succumb to electric competition too.

Coal and oil competition must not be overlooked. The bituminous coal industry recently appropriated $2,000,000 to be used at the rate of $500,000 per year to promote the use of soft coal. One of their projects is the development of smokeless stoves.

Oil competition will depend largely on the availability of oil after the war. If oil is available in large quantities this type of competition will be tough particularly along the eastern seaboard. If the oil supply is scarce, we can forget oil competition.

It is very difficult to get management excited about the food service cooking load. It is hard to become excited about something you already have. The gas industry already has approximately 85 per cent of the food service cooking load. There is not much of a new possible potential load to be gained. Therefore the gas management cannot see much of a return on any investment for sales promotion in this field. The gas companies have had this revenue for so long that they cannot imagine losing it. Well, ignorance is bliss and sometimes fatal. Gas management will spend thousands of dollars to promote the sales of house heating, water heating, refrigeration, and industrial equipment. Why? Because it adds a *new* revenue load. It does not make sense to spend money to add revenue in one pocket while at the same time you are losing money out of the other pocket at almost the same rate for lack of energy in another field. If I had my way every gas company would have an old business department whose duties would be to protect the revenue we already have while the new business department added new revenues through the sale of appliances.

A wide variety of cakes and pastry is produced in an up-to date gas deck oven

Start To Plan Now!

What can we do about it? Start to plan *now*. The title post-war plan for this program is a misnomer. It is in reality a wartime program for the salvation of the food service cooking load after the war. It is an outline of a plan to be developed in detail by the committee in the ensuing year. It is not the intention of the Food Service Equipment Committee to try to tell the industry what to do. The food service equipment program is of necessity different than other gas post-war programs. The program is built chiefly around three main wartime activities as follows:

1. A survey of all food service equipment establishments
2. Customer attitude which is dependent upon service
3. Building up dealer relations

The five post-war activities consist of:

1. Selling technique
2. Engineering specialists
3. Advertising
4. Publicity
5. Research developments

Each point will be analyzed and reasons given for their need. The program probably lacks glamour but it is mainly a retention of load program which is never glamourous. The program is designed to point out the problems in this field. It suggests the necessary starting point for every gas company. It does not attempt to develop factors affecting local conditions.

A survey of food service establishments is a fine starting point. For effective post-war sales work it is necessary to have accurate and complete knowledge of:

1. Our market
2. Customer attitude
3. Of potential prospects

Too long have we worked in the dark. The committee believes that this "important" information can be best secured by a customer survey of present users and potential users. Some gas companies are now making such a survey. The committee believes every gas company should make a survey or make arrangements to have it

made. The committee has studied the needs of such a survey and has prepared a guidance form. It can and should be altered to meet local needs. It is suggested, however, that each gas company study this form before designing its own form.

A survey by every gas company would constitute an industry survey. The committee hopes to tabulate nationally the important facts brought out by the local surveys. Such information would be available to gas companies, manufacturers, and cooperating dealers. It will be extremely valuable in organizing cooperative sales promotion programs by gas companies and manufacturers. The survey will be the basis for post-war programs for gas companies, manufacturers, and cooperating dealers. The utility will be the key around which all three plans of action will be built. The manufacturers will be asked to study the results with the American Gas Association and to promote with the committee a ready-to-go program.

Customer Attitude Important

Customer attitude is a very important factor. Their attitude to a large extent will determine the fuel to be selected after the war. Customer attitude will depend principally on the quality of the service we render now. Good will is based on dependable service, reasonable initial cost of equipment, sturdy, well-built trouble-free equipment, quick low-cost or free service when trouble occurs. Good service is the backbone of customer good will and customer good will makes sales. The splendid wartime service rendered by gas equipment is appreciated by the customers. The gas industry can and should capitalize on this fact in the post-war sales period.

Other factors affecting the choice of fuel are:

1. Generally lower operating costs. In the last few years electric rates have been greatly reduced
2. Familiarity of cooks and bakers with the operations of gas appliances
3. Low initial costs

Some adverse factors effecting gas are:

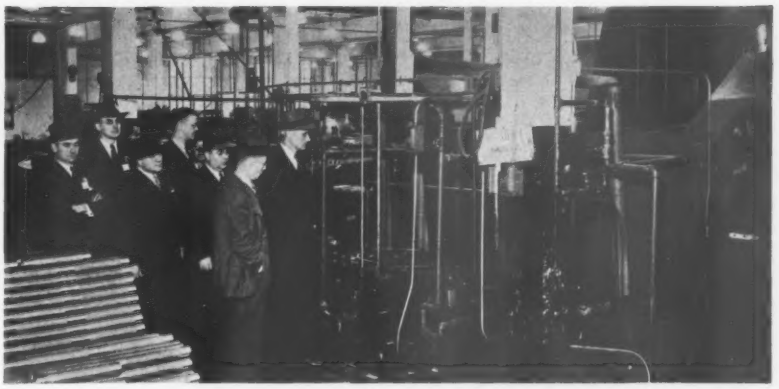
1. A feeling that gas is not modern
2. Lack of a complete line of appliances designed for uniformly individual manufacturers
3. A feeling that gas appliances give off too much heat. This is due to competitive propaganda. It is a fallacy which can be disproven.

Our task is to make sure that worn-out gas equipment is replaced by new gas equipment. We cannot rest on past laurels or customer attitude alone. There is an old slang phrase "It ain't what you use to be, it's what you are today." It certainly will apply to us in this field after the war.

We must improve our dealer relationship. Dealer cooperation is vital to post-war success. We must realize two simple

(Continued on page 47)

Gas-Fired Unit in War Production



One of the scenes viewed by members of the Mid-West Industrial Gas Sales Council, November 12 during their Fall Meeting which included visits to five Milwaukee plants. This picture shows a gas-fired degreaser at the L. J. Mueller Furnace Company plant. It has been in use on war equipment production and has a total input of 1,120,000 B.t.u. per hour.

American Gas Association Industrial and Commercial Gas Advertising for January

The National Advertising Committee of the Industrial and Commercial Gas Section, J. P. Leinroth, chairman, and F. B. Jones, vice-chairman, announces that full page advertisements will appear in the trade and business magazines listed below during the month of January. These advertisements are prepared in cooperation with the Committee on National Advertising as a part of the industry's national advertising campaign.

MAGAZINE	THEME
	General Manufacturing
BUSINESS WEEK (Jan. 1—⅔ page)	"Getting set for postwar operation? Check into how GAS equipment, drafted for war, is being improved for peace!"
BUSINESS WEEK (Jan. 29—⅔ page)	"No wonder POSTWAR is in the headlines! GAS engineering, too, is getting set for new challenges after the war."
	Metals Industry
THE IRON AGE (Jan. 13) STEEL (Jan. 24) METAL PROGRESS METALS & ALLOYS INDUSTRIAL HEATING	"It's 'Hattie the Heat-Treater' now! Modern *GAS* heat-treating equipment is streamlined, automatic, easy to operate."
	Glass Industry
GLASS INDUSTRY	"Winning the war with *GLASS* . . . winning the peace with it, too! That's the story of this versatile industry, in which *GAS-fired* equipment plays so great a part!"
	Baking Field
BAKERS WEEKLY (Jan. 17)	"Why military foods get better . . . Trained dietitians and up-to-date *GAS baking equipment* make a strong team."
	Hotel and Restaurant Fields
RESTAURANT MANAGEMENT HOTEL MANAGEMENT	"GAS EQUIPMENT . . . for well cooked meals at Boeing Aircraft!"
	Hospital Field
MODERN HOSPITAL	"The military's experience with modern GAS equipment will help you after the war!"

Technical Section Meetings Set Stage for Year of Accomplishment

AT a series of meetings at the Hotel Pennsylvania, New York City, Tuesday and Wednesday, December 14 and 15, officers and members of the committees of the Technical Section completed organizational details and laid the groundwork for technical progress during the Association's new year. The meetings, held under the direction of Charles F. Turner, The East Ohio Gas Company, Cleveland, chairman of the Section, were well attended and generated a large amount of enthusiastic discussion of the gas industry's operating problems. From all indications, the Technical Section is headed for one of the most successful years in its productive history.

Following individual meetings of the Chemical, Distribution, Gas Production, Gas Conditioning, and Motor Vehicles Committees, the chairman of each committee outlined plans for the year at a Managing Committee dinner Wednesday evening. The Technical Section Committee on Post-War Planning Cooperation met the following day to map its program.

Post-War Planning

An intensive and comprehensive discussion of the direction and scope of the technical post-war studies took place at the Thursday meeting of the Committee on Post-War Planning Cooperation, J. V. Postles, of Philadelphia, chairman. In process of developing the technical phases of the general Post-War Planning Committee's work, this committee reviewed the nine suggested research activities submitted by the Section's membership and several other topics which have recently come to the fore. Of those subjects previously considered, the upgrading of low B.t.u. gases without the use of oil and determination of the most economical B.t.u. gas, still held places of first importance.

Considerable importance was attached to a projected study of the economics of house heating which is being directed by H. O. Loebell's subcommittee of the main Post-War Committee's Market and Economic Research group led by Hall M. Henry. H. B. Andersen of Philadelphia, immediate past chairman of the Distribution Committee, and F. J. Pfluke of Rochester, chairman of the Gas Production Committee, have been appointed to handle the distribution and production phases, respectively, of this house heating study, which is to be divided as follows: (1) distribution cost investment, (2) distribution operating cost, (3) manufactured gas plant investment and (4) incremental cost of manufacturing gas for house heating.

President Acker Stresses Research

Ernest R. Acker, president of the Association, speaking at the Managing Committee dinner, explained the effect of the A. G. A. reorganization plan on the Technical Section and strongly urged the Section to expand its research activities. Specifically he called for more research on gas production methods, and promised his support for any soundly conceived enlarged research program. In conclusion, Mr. Acker called attention to the new general committee now being organized to coordinate and evaluate all A. G. A. research projects.

Distribution Program

Leading off for the committee chairmen, A. C. Cherry, Cincinnati Gas & Electric Co., chairman of the Distribution Committee, announced the organization of a safety subcommittee to promote greater safety in distribution work. The chairman of this group is expected to serve on the Accident Prevention Committee and to dovetail its work with that body.

Of particular post-war significance in the Distribution Committee's plan of action, Mr. Cherry said, is the formation of a new committee dealing with distribution design for domestic load building. Under the chairmanship of Mr. Andersen, this committee will study the ultimate capacity of distribution systems and the economics of expansion.

The Pipe Coatings and Corrosion Subcommittee under the chairmanship of Dr. Raymond F. Hadley, Susquehanna Pipe Line Co., Philadelphia, will continue its work on the development of an apparatus to determine the corrosivity of soil in various locations. A real contribution is expected to be forthcoming soon in this direction. In addition, proper use and kind of pipe coatings will be investigated and Dr. K. H. Logan of the U. S. Bureau of Standards is expected to prepare a treatise analyzing the results.

Mr. Cherry stated that an active meter program would be carried out under the direction of J. H. Collins, New Orleans Pub-

Charles F. Turner, Cleveland, chairman, Technical Section; Ernest R. Acker, Poughkeepsie, president, American Gas Association, and J. V. Postles, Philadelphia, chairman, Committee on Post-War Planning Cooperation

Hall M. Henry, Cambridge, chairman, Post-War Planning Committee's Market and Economic Research group, and H. O. Loebell, New York, chairman of post-war subcommittee studying the economics of gas house heating

F. M. Goodwin, Newton Centre, past chairman, Technical Section, and J. V. Postles, Philadelphia, chairman, Committee on Post-War Planning Cooperation

Dr. A. W. Gauger, State College, chairman, Subcommittee on Stresses and Strains; H. B. Andersen, Philadelphia, and A. C. Cherry, Cincinnati, chairman, Distribution Committee

lic Service Inc., chairman of the Meters and Metering Subcommittee. Important work is planned in the field of customer service.

Much information on distribution developments is expected to be on tap at the annual Distribution Conference which will be held in Cleveland, Ohio, in April. In this connection, Mr. Cherry announced that the committee will drop the name "sponsor" for individuals responsible for certain specific activities.

Chemical Committee

Remarkable progress was made by the Chemical Committee at its organization meeting, V. J. Altieri, Eastern Gas & Fuel Associates, Everett, Mass., chairman of the committee, reported. Organization of the committee was effectuated during the last few months of the Association year and led to the compilation of a tentative program and considerable supplementary information. A copy of the compilation together with a request for guidance was sent to the officers of the Technical Section, the chairmen of the Section Committees, members of the Chemical Committee, and recognized authorities in the gas industry from whom the committee received views and opinions which were of great assistance.

Of great interest, for example, were the views of A. M. Beebee's Post-War Planning Committee strongly recommending all possible potentialities of known processes to fulfill the objective of making oil and gas from coal and also upgrading of low B.t.u. gases without the use of oil. Various aspects of such problems are being studied by Chemical subcommittees and results are being channelled to the Post-War Planning Committee through a cooperating subcommittee. These and a great array of other important topics were thoroughly discussed by members of the Chemical Committee representing large and small companies from all parts of the country.

A. G. A. members on the Pacific Coast participated actively and assisted by correspondence. Guy Corfield, Southern California Gas Co., advised concerning the activities of a regional subcommittee on the Pacific Coast. W. R. Fraser, Michigan Consolidated Gas Company, headed a subcommittee which developed an ingenious method for disseminating information on new and unique ways of solving miscellaneous problems. Chemistry in Safety and Accident Prevention, an activity headed last year by the late Dr. Mighill, again is a subject of importance which is being followed by a subcommittee of which M. C. Carter, Rainey Wood Coke Company, is chairman. Dr. Frank H. Dotterweich, Texas College of Arts and Industries, chairman, and Dr. Reginald L. Wakeman, Mellon Institute, Pittsburgh, vice-chairman of the Subcommittee on New Developments, presented a comprehensive report indicating the value to the industry of following applied as well as pure research and it is indicated that the Chemical Committee may well spend more time on applied research.

Harry Held, Montreal Coke and Manufacturing Company, outlined work on Analysis and Tests. Dr. A. W. Gauger, Pennsylvania State College, chairman of the Joint Subcommittee on Stresses and Strains Developed during Carbonization, reported on situations confronting the work of this joint undertaking of the Gas Production and Chemical Committees. Louis Shnidman, Rochester Gas and Electric Corporation, made available many sources leading to a wealth of information concerning "New Tools for Research and Production."

Gas Production

Reporting for the Gas Production Committee, F. J. Pfluke, Rochester Gas and Electric Corp., stated that his committee meeting was well attended and the foundation for an interesting Production Conference program was laid. He pointed out that this year, in organizing the committees, an attempt was made to draw new members from some of the smaller companies and expressed the hope that their problems will receive a proportionate share of consideration.

The work of the subcommittees will con-

"Fuel-Flue Gases" Committee hard at work: Dr. C. W. Wilson, Baltimore; Dr. G. E. Seil, Philadelphia; Dr. Paul Peters, Chicago, and Louis Shnidman, Rochester, chairman

J. Edward Brewer, Philadelphia, member, Chemical Committee, and liaison member, Gas Conditioning Committee, and V. J. Altieri, Everett, Mass., chairman, Chemical Committee

R. Van Vliet, Stapleton, vice-chairman, Gas Production Committee; Dr. C. W. Wilson, Baltimore, vice-chairman, Chemical Committee, and J. Edward Brewer, Philadelphia

H. D. Lehman, Philadelphia, chairman, Gas Conditioning Committee, and E. W. Guernsey, Baltimore, vice-chairman, Gas Conditioning Committee and chairman, Organic Sulfur Subcommittee

sist of consideration of immediate problems facing the operating man as well as post-war problems which have been assigned by the Post-War Planning Committee. Three major post-war problems which will receive consideration by the committee are:

(1) A study is now under way to develop a simplified means of determining house heating gas production costs. This study will consist of independent analyses made by four companies of different size and the results will constitute one phase of the complete cost study being made by the House Heating Committee.

(2) A survey will be made to determine if there have been any new developments in oxygen manufacture methods which will warrant reconsideration at this time of the use of oxygen for gas production.

(3) The post-war house heating load possibilities make it imperative that careful consideration be given to any possible means of increasing present gas production equipment capacity. This is also a very pressing immediate problem which faces nearly every operator who is attempting to meet the added war loads. It is therefore proposed to summarize all known means of increasing capacities.

The various subcommittees will also give consideration to a large number of problems facing the industry among which are: the future prospects for carburetting oil, means of increasing oil-cracking efficiency, studies of the trends in coal production and preparation as they affect carbonizing practice and coke quality, effect on water gas operation of change in coke quality due to necessity of using inferior coals, proper stocking of coal and maintenance problems. A large number of discussion subjects have been suggested to the committee which should insure an interesting luncheon conference.

Safety being of paramount importance to every operating man, it was decided to give greater consideration to this subject. Accordingly a new Safety Subcommittee has been added to cooperate with the general Accident Prevention Committee.

The committee recommended that a two day Production Conference be held in New York some time in the early Spring.

Gas Conditioning

H. D. Lehman, of Philadelphia, reporting for the Gas Conditioning Committee, of which he is chairman, pointed out that the work of this group in recent years has been divided into three major subjects: (1) protection of equipment against stoppages from vapor phase gums, (2) elimination of dust, principally from natural gas, and (3) solution of the organic sulfur problem.

The vapor phase gum problem, Mr. Lehman declared, is about to be solved as a basic problem through the committee's activity in advocating an appliance requirement compelling installation of a device to eliminate gum as a cause of pilot light stoppage. The dust problem is in the hands of a permanent subcommittee under the direction of Guy Corfield, of Los Angeles, and some progress was reported although war work has hampered full attention to the problem. The application of the filter principle is being pursued in an effort to reach a solution.

Research on the organic sulfur problem is being carried on with unabated vigor under the direction of a permanent subcommittee headed by Dr. E. W. Guernsey, Consolidated Gas Electric Light and Power Co. of Baltimore. In introducing Dr. Guernsey to describe this activity, Mr. Lehman praised him and his co-workers for their great contribution towards the solution of this perennial problem. Dr. Guernsey then presented a forthright report sketching the results to date and the plans for the future. His report follows:

Organic Sulfur Research

"The general objective of the work of the Organic Sulfur Subcommittee is to reach a critical judgment as directly as possible as to the extent to which it may be possible to reduce the concentration of organic sulfur at a tolerable cost, and as to the value of suggested means of accomplishing the reduction. The considerations are broadly of two kinds: (1) the subcommittee, through the efforts of its members, attempts to appraise available information

Burgess Manchester, Metropolitan Utilities District, Omaha, Nebraska

R. F. Hadley, Philadelphia, chairman, Subcommittee on Pipe Coatings and Corrosion, and A. C. Cherry

F. J. Pfluke, Rochester, chairman, Gas Production Committee, and Kathleen Fuery, American Gas Association, New York. The picture was taken at the Wednesday gas production session

Linn Edsall, Philadelphia; E. W. Jahn, Baltimore, chairman, Motor Vehicles Committee; S. G. Page, Pittsburgh, vice-chairman, Motor Vehicles Committee, and J. E. Garner, St. Louis

pertinent to the problem, and, (2) specific research activities are sponsored directed toward the finding of practical means for the elimination of organic sulfur.

"The current research activities are directed toward the accumulation of fundamental information which will be useful in stimulating and guiding actual process developments. It is hoped that if a direction for development should be clearly indicated by these studies, the principal burden of the engineering and large scale development will be borne by the manufacturing and operating companies.

"In the early discussions of the subcommittee, it became apparent that one of the greatest obstacles to an appraisal of available or proposed procedures for sulfur removal was the lack of comprehensive data on the identity and proportion of the actual sulfur compounds constituting the 'organic sulfur.' It appeared that a major difficulty in obtaining a survey of sufficient scope to give a good general indication concerning the organic sulfur constituents was the lack of adequate proven simple methods for determining the specific organic sulfur constituents. The development and critical appraisal of such methods was therefore undertaken as the initial research activity looking toward the removal of organic sulfur.

"Active research directed toward the development of such methods has been under way at the Institute of Gas Technology for more than a year under the sponsorship of the subcommittee. In addition to the support provided by the American Gas Association, the Rochester Gas and Electric Corporation has made a substantial contribution. A progress report by Charles H. Riesz and Cornel Wohlberg on this work at the Institute was presented at the recent convention of the Association at St. Louis. As the report showed, much useful information has been obtained on the behavior of mercaptans, thiophene, carbon bisulfide, and carbon oxysulfide, which together are believed to constitute most of the organic sulfur in many manufactured gases. There is much work still to be done before a completely proven method suitable for general laboratory use can be offered. In the meantime, however, some application is being made of the information thus far obtained and the knowledge of the nature and amounts of the organic sulfur constituents in typical gases is slowly being increased.

"The Executive Board, at its meeting on October 26, made available approximately $15,000.00 for organic sulfur research during the fiscal year 1943-44. It therefore becomes possible not only to push the work on the identity and relative amounts of sulfur compounds with increased vigor, but also to undertake work in new directions, provided it is possible to enlist suitable additional personnel. The search for the necessary highly qualified research men which was started by the Institute immediately after this authorization has not yet been successful. It is expected, however, that it will be possible to secure the necessary people without much further delay.

"When the required talent is available, it is planned to extend the work in the direction of the study of the properties of such sulfur compounds as thiophene, carbon bisulfide and carbon oxysulfide, which are present in troublesome concentrations in at least many commercial gases. It appears especially desirable to study *quantitatively*, chemical reactions of possible applicability in the removal of the specific sulfur compounds from gas. The possible interferences of normal gas constituents such as carbon dioxide and water vapor or other substances in these reactions may be considered in like quantitative manner. Most of the information which appears in the literature concerning these reactions is distinctly qualitative, and frequently applicable to pure reactants and hence leads to no positive conclusions concerning the applicability of the reactions in the practical problem which concerns small concentrations of the sulfur constituents.

"The choice of the exact topics for intensive study will necessarily depend to some extent on the particular background and experience of the men who may be secured to undertake the work. The approach which is contemplated may however be illustrated by some examples of possible topics. Thus, studies may be made of reaction rates and especially of chemical equilibria in reactions of mercuric salts or other substances with thiophene and with hydrocarbons such as are commonly present in manufactured gas; of carbon bisulfide and of carbon oxysulfide with various amines and with various alcohols; and of carbon dioxide and of water with certain of these reagents.

"If sufficient data of this kind are obtained, it should be possible to determine the limitations of a proposed process for the treatment of any particular gas and to do this from a detailed knowledge of the composition of the gas, including the identity of the important sulfur constituents, thus avoiding expensive large-scale tests of unsuitable procedures.

"While the emphasis will be placed on the accumulation of fundamental informa-

S. P. Cobb, New York; H. W. Nicolson, Newark, chairman, Subcommittee on Work on Customers' Premises, and H. B. Andersen, Philadelphia

J. H. Wolfe, Baltimore

tion concerning the nature and properties of organic sulfur compounds, it is not intended to preclude the possibility of some more empirical studies in any direction which may seem especially promising. For example, it has been recently reported that certain catalysts are effective in promoting the reduction of thiophene. The low degree of reactivity of this particular kind of sulfur has been one drawback to the application of catalytic oxidation or reduction. If now it is possible to simultaneously convert all types of organic sulfur to readily removable hydrogen sulfide or sulfur dioxide, especially if this could be done at lower temperatures than heretofore, the possibility of the use of catalysts would require reconsideration. Some observations to check these possibilities might be included in the program."

Motor Vehicle Operation

The Committee on Operation of Public Utility Motor Vehicles under the chairmanship of E. W. Jahn, Consolidated Gas Electric Light and Power Company of Baltimore, anticipates an active year. The committee plans to continue the recently inaugurated practice of advising headquarters, through Secretary A. Gordon King, of all releases from the governmental agencies which will in any way affect the operation of utility fleets. In a similar manner any publications containing information which will be valuable to fleet operators will be referred to headquarters. Such information is distributed to member companies through the A. G. A. MONTHLY or the Information Service Letter.

An improved driver training program will be formulated at the earliest possible date by a group of Motor Vehicle Committee members, headed by Linn Edsall, Philadelphia Electric Co., past chairman. The members of the committee are of the opinion that good truck operators are the most important element in prolonging the useful life of a truck, believing that the best truck is no better than the man who operates it.

The committee also proposes to review carefully the specific needs of the utility operators as to chassis and bodies, with the thought of urging manufacturers to incorporate certain desired features in their products. Mr. Jahn said the committee would develop recommendations to be presented to manufacturers asking that they equip their vehicles with accessories which will permit easier testing of motor, ignition system, carburetor, etc., so that servicing will be facilitated.

Along this same line, it will endeavor to get manufacturers to standardize on the size, locations and nomenclatures of certain parts so as to (a) facilitate servicing and (b) minimize the inventories. The preparation of Standard Practice Instruction Cards by the manufacturers and their use by the fleet operators will be promoted. The use of these cards will make for uniformity in the method of inspecting and servicing motor vehicle equipment.

The matter of cranes and derricks will be considered, as to their design, weight, servicing, proper operation, etc. One of the larger manufacturers has already submitted a questionnaire to some fleet operators asking for their suggestions in connection with the manufacture of new equipment after the war. The committee plans to agree on certain fundamental changes or additions which would be desirable in order to obtain equipment which will be most efficient.

A careful study will be made of post-war problems by several members of the committee under the guidance of Jean Y. Ray, Virginia Electric and Power Co., Richmond, former chairman of this committee.

Member companies will be invited to refer their individual operating problems to the committee for advice and solution. The committee will make liberal use of facilities to obtain information not only in the public utility industry but also in other fields. This phase of the work will be under the direction of S. G. Page, Equitable Auto Co., Pittsburgh, vice-chairman. Among the subjects to be studied will be the advantages and disadvantages of conventional front axles versus independently sprung front wheels; problems arising due to inability to obtain repair parts; remedies to certain inherent troubles that are present in the various makes of motor vehicles, etc.

It was the consensus of those present at the Managing Committee dinner that the series of organizational meetings had set the stage for a year of great accomplishment in improving gas operating practice.

Poetic Engineers

UNTIL recently it was generally assumed that engineers, particularly those of the old "gas house gang," were immune to such romantic effusions as writing poetry. Now comes irrefutable evidence to the contrary. Jacob D. von Maur, engineer of distribution, Consumers Gas Company of Toronto, widely known "father" of the American Gas Association's Distribution Committee, has teamed up with Edward E. Wall, another engineer, to produce a *second* volume of free verse entitled "Literary Productions of Two Civil Engineers."

The authors further destroy the myth about engineers by reporting in the foreword that they have received many letters in verse from engineers in response to Volume 1 of their outpourings. They admit they never before suspected the writers of "such sentiment and love of the beautiful."

The MONTHLY threatens to open a poetic department under the Technical Section.

Corrosion Engineers Form National Organization

ANNOUNCEMENT has been made of the launching of a new organization to be known as the National Association of Corrosion Engineers. All persons engaged in the work of corrosion control or mitigation on underground metallic structures are invited to apply for membership. Inquiries should be directed to O. C. Mudd, acting secretary-treasurer, c/o Shell Pipe Line Corp., Box 2648, Houston 1, Texas, or to R. A. Brannon, acting president, c/o Humble Pipe Line Company, Drawer 2220, Houston 1, Texas.

An annual meeting of the newly formed association will be held April 10-12, 1944, at the Rice Hotel, Houston. All members or applicants for membership are invited to attend.

The new association stems from the Mid-Continent Protection Association formed in 1938 for the purpose of exchanging information regarding developments in the field of mitigation or prevention, by electrical means, of corrosion to pipe lines and other metallic structures. Other purposes were the promotion of cooperative action between companies and the development of standard procedures.

Since 1940, members of this association have been carrying on their activities as the Cathodic Section of the Petroleum Industry Electrical Association.

SUPERVISORS' TRAINING

(Continued from page 36)

however, must in specific situations reveal his leadership. Hence, the conclusion was reached that the most profitable way to discuss leadership was to examine critically actual cases, and by this analysis to draw out workable principles.

Accordingly, the first step in building the program was to outline the essential factors in good leadership. Certain factors, such as above-average intelligence, health, and energy, were eliminated as topics for discussion. These factors are fundamental considerations in the selection of supervisors, but little can be accomplished by a discussion of them on a group basis. There remained to be considered those other qualities of good leadership, such as honesty, fairness, forcefulness, humaneness and friendliness, loyalty (up and down), resourcefulness and ingenuity, ability to give orders and to get ideas from others. Two other qualifications—teaching skill, and ability to analyze methods and to plan—were eliminated, as they are proper subjects for separate training programs.

Thirty-six case studies were finally selected to comprise the course material. In each problem a specific action or attitude of a foreman to a given situation is stated. To encourage independent analysis of the problems by each member of the group, a summary sheet was prepared. Before the discussion of any problem, the participants are asked to fill out the summary sheet, which provides for five possible reactions to the action or attitude of the supervisor in the problem. These five categories of opinions are: *strongly agree, agree, undecided, disagree, strongly disagree.* A simple check mark under one of these column headings on a line opposite the problem number completes the summary form. The members of the group are assured that the summary sheet is not a test, and that there will inevitably be some misinterpretation

of the facts other than as intended in the problem. The summary sheet is used as a device to let the members of the group familiarize themselves with the content of the complete set of problems.

The pattern for the discussion of supervisory principles is based on the general agreement by leaders in management and supervision on the following qualities needed by a supervisor: forcefulness, integrity, fairness, loyalty, and friendliness and understanding. The case problems bring up the need for these qualities in practical situations and develop a set of working principles which have been tested by supervisory leaders. Some of the concepts, grouped under the five main headings, are:

1. *Forcefulness:* the requisites for making orders effective, lines of authority, force of example, discipline and reprimands, consistency in maintaining standards, developing initiative in subordinates.
2. *Integrity:* personal standards, moral principles, expediency, flexibility, cooperativeness.
3. *Fairness:* getting facts, suspending judgment, impartiality, avoiding appearance of favoritism, responsibility to subordinates, judicious praise.
4. *Loyalty:* buck passing, supporting company policy and decisions of superiors, saving faces, discharging responsibilities.
5. *Friendliness and Understanding:* greeting employees, the importance of listening, the "open door," complaints and their causes, knowing your men.

FOOD SERVICE EQUIPMENT

(Continued from page 41)

basic fundamentals. First the dealer is not interested in the battle of fuels. That is our job and ours alone. We cannot even depend on the manufacturers to do it for us. Secondly, the dealer is in business to make money. This may sound a little trite but we sometimes apparently forget it. If you take away the dealer's bread and butter, he won't like you. Profit from appliance sales is his bread and butter. Our primary job is to sell gas. If the dealer has worked on a job and advocated gas he should have the privilege of selling the equipment.

Proper type of compensation for gas company salesmen is important if we expect dealer cooperation. We cannot compensate gas company salesmen in such a manner that they will be in conflict with the dealer salesmen and expect dealer cooperation.

Why is the cooperation of the kitchen equipment dealers important? Dealers sell all kinds of items used in the kitchen. Some even sell food stuffs. They are continually in contact with our customers. They have built up a friendship and respect with our customers. The dealer's opinion of cooking fuels is considered unbiased and respected by our customers. They are looked upon as an authority on all kitchen equipment. On large jobs the architects usually call in the kitchen equipment dealers when they make a kitchen layout. Once the layout and specifications are made they are very hard to change. I have heard gas men damn kitchen equipment dealers as being no good; that they do not try to sell gas. It is not the kitchen equipment dealers job to sell gas. They are not interested in the fuel used. Why should they be?

It may not be how much good a dealer can do for us but how much harm that will count. They are in a position to make our road easier or very tough. They are in a position to decide the type of fuel to be used on many jobs. We might as well be realistic. Any association in business must be profitable to both parties. Personally I am against subsidies for dealers. They lose for you the respect of the dealer. They invite retaliation by competitors. They eventually do more harm than good. Fair play and a better understanding of the dealer's position is all that is needed. The golden rule principle with dealers should be applied by both manufacturers and gas companies. Some method should also be worked out whereby the large chain food purveyors are systematically contacted and sold the superiority of gas as a cooking medium.

Post-War Plan of Action

So much for our wartime program. Now for our ready to go post-war plan of action. Each should just analyze its own survey findings. Nationally tabulated facts should be reviewed. Customer attitude may be gauged by both. Each of the following parts of the program will be further developed by the committee and discussed in a later report.

Our number one objective is selling. The selling technique in this field will change after the war. The method of selecting salesmen and their required qualifications should be carefully analyzed. Scientific selection of salesmen through aptitude tests should be considered. The method of training new men must be planned with care. The old salesmen must be reeducated. With the disappearance of competition the men have become sluggish. They have lost their spark. Their morale is low. We must rebuild their enthusiasm. We must rekindle that spark which makes them look forward in anticipation of meeting keen competition and once again make them enjoy the thrill that comes from having successfully met it.

The form of salesmen's compensation is very important and should be studied. The number of men required for a given territory should be carefully considered. Selling efforts can no longer be confined to basic appliances such as ranges and bake ovens. Equal emphasis should be placed on all appliances producing a gas load.

Special attention must be given to load mortality by replacing old equipment with new modern gas appliances. The salesmen must be able to sell the modernity of new gas appliances. This is the principle attack of the electric industry. Is it the fuel or appliance which is modern? It is sometimes hard to follow the reasoning of the electric men. They say that electricity is modern. Yet everyone will agree that the old trolley car is antiquated and old fashioned. It is run by electricity so on this basis of reasoning used by the electric men it would follow that electricity is old fashioned and antiquated. The facts of the matter are that it is not the fuel but the appliance which is or is not modern. It is not fair to compare a new electric appliance with a 20-year-old gas appliance. These facts should be forcibly brought to the attention of our customers. It is the manufacturer's job to make the new appliances modern and to keep pace with modernistic trends. It is the gas companies' job to promote them.

Little or no help has been given to dealer salesmen education. The manufacturers are just as much to blame as the gas companies. This situation must be corrected by some kind of educational program. The dealer salesman sells pots, pans, everything used in the kitchen. In the past he has been given a catalogue and told to sell gas appliances. I submit that this is no way to sell anything. No attempt has been made to sell either the dealer salesman or the customer on the attributes of gas as a fuel.

Trained Technical Specialists Needed

The need for trained technical specialists in the field after the war is our second objective. There will be a greater use of specialized equipment. Food will require more and better controlled cooking appliances which in turn will require a more accurate food service equipment technical knowledge. The principles of kitchen layout will be a must. This means that the technical specialists must have a thorough knowledge of all gas cooking appliances, all devices and machinery used, lighting, ventilation, hot water supply, types of labor, working conditions, estimation of operating costs, competitive equipment, gas and electric rates, and competitive sales features. A positive sales attack is the best defense. The technical specialist must be able to refute and explain exaggerated claims, misstatements of facts, trick and complicated rates.

An agreement should be reached in the industry on the proper sizing and number of appliances for different size and types of kitchens. There is evidence that in many gas kitchens the appliances have been oversized and too many. This has resulted in high gas consumption, greater vulnerability, higher maintenance, wasted space, too high an investment. This situation can only be corrected through a process of education.

It has been suggested that the committee prepare a loose-leaf illustrated booklet with a brief case history of all important hotel, restaurant and institutional gas jobs in the country, to which new jobs could be added as they arise. Our competitors boast about each job they have while we say nothing of the other 99 gas jobs.

In addition to fuel competition we will be competing after the war for the customer's dollar for other commodities. A survey of 50,000 institutions indicated that $8,500,000,000 will be spent in 3 to 5 years after the war. Of this amount 14 per cent or approximately $1,200,000,000 will be spent for kitchens and food service equipment. Therefore we must show the

customer the need and wisdom of buying gas equipment *first*.

The need for a strong advertising program in this field is apparent. No ordinary hit-and-miss program will suffice. The post-war advertising program in this field must present point by point the features, values and benefits of gas to the customers. It must hit the customer in his pocketbook. It should show how gas will improve working conditions and it should stress the modernity of new gas appliances.

Publicity is a powerful weapon essential in any sales promotional program. Publicity is a direct form of propaganda. Propaganda sways customer and dealer attitude sometimes even when the statements cannot be proven. A typical example is the fine job the electric industry has done in swaying public opinion in the belief that only electric appliances are modern. Publicity in the food service equipment field is hard to obtain. It usually lacks glamour. Definite statistics are hard to get. It is necessary to write in non-technical terms. Dealers must be given information on all new developments. They must be supplied with the correct story on performance and costs. Information should be collected and distributed from a central point. The gas industry should have a paid man to handle this work if it is to be done well.

Progress in any field can be measured by the amount of research and development in that field. Fundamental research is being directed towards more efficient atmospheric burners, better oven heat distribution, proper ventilation, and immersion tube improvement. These routine developments must be supplemented in bolder aspect by an over-all improvement in present appliances, development of entirely new devices to meet the new conditions that will result from the war. Some of this work can and is being done by the American Gas Association. The greater part of this research and development must of necessity be done by the food service equipment manufacturers. Food service equipment manufacturers need to broaden their lines to cover all gas appliances in the kitchen. This can be done by developing new appliances or by suitable arrangements with manufacturers of specialist appliances.

In conclusion each company large and small should take stock of its food service equipment business *now*. It should plan and act to preserve and improve this load. Tomorrow may be too late. Will we wait until the horse has been stolen before we lock the barn door? A survey of this field is an excellent starting point. The food service equipment committee will try to help you by developing and improving the plan outlined.

No plan is any better than the use to which it is put. The committee know all the alibis; you have more important things to do now, you are too busy, you haven't got the time, you haven't enough personnel. Do you want this load or don't you? If you do you will find ways and means and time to do something about it. The man who thinks he can't is usually right.

GAS ADVANCES IN 1943

(Continued from page 6)

appliance becomes a sustainer of the other and the benefits of added loads may reduce the cost to the customer. This fact makes house heating assume new importance, especially since one of the most promising of new services which will be available is year-round air-conditioning. This has passed the field test, awaits the "go" signal for production, and is expected to provide a substantial addition to the industry's off-peak load.

An effort was made during the year to seek to reduce to a minimum the number of domestic gas appliance models required, as well as individual company requirements to the end that the equipment suppliers might reduce to a minimum their costs of manufacture, and thus be able to provide high quality equipment to insure maximum customer satisfaction and at the same time at minimum cost.

Among other plans, there is in process of evolution a coordinated kitchen equipment plan which the gas industry can offer the public as a complete package kitchen, including cupboards, sink, range, refrigerator, dish washer, water heater, etc. This can be purchased piecemeal or all at one time, and the plan already has the support of some large kitchen equipment manufacturers and some important national sales outlets.

USE OF GAS IN MILITARY POSTS

(Continued from page 28)

Samples Taken from Stack 10/4/43

	Oven No. 1	*Oven No. 2*	*Oven No. 3*
CO_2	6.5	5.2	3.2
O_2	6.5	8.8	12.9
% of Excess Air	39.0%	63.0%	138%
Draft	—.10"	—.12"	—.06"
Oven Operating Temperature	375°-400°		

Samples from Sight Hole of Combustion Chamber 10/13/43

	Oven No. 1	*Oven No. 2*
CO_2	2.0%	5.0
O_2	Not Determined	11.2

(C) The ultimate CO_2 resulting from combustion of the gas as furnished is approximately 10.0%. No carbon monoxide was found in any sample as determined by the CO Detector. Variations in adjustments of air gas mixtures were tried in an attempt to increase the CO_2 content of the flue products without material success. It is apparent that the high flue loss due to excess air is caused by:

(1) High stack draft conditions.

(2) Loose joints and connections in the interior ducts permitting air to be drawn from the baking chamber into the duct system.

(3) Infiltration of air into the baking chamber through fixed openings at the front of the ovens.

To reduce and control draft effect it is recommended that draft divertors or barometric dampers (Draftostat) be installed in the stacks from each oven. Seal or otherwise tighten the interior duct connections to prevent air infiltration into the flues. Adjust oven aeration openings to minimum necessary for proper oven ventilation.

(D) Request for Loan of Test Apparatus and Assistance on Flue Gas Analysis in Plants Using Fuels Other Than Gas.

(1) We are prepared to loan such available test apparatus as may be necessary for a limited period, the length of time depending upon our need for this apparatus for test elsewhere.

(2) We also offer personnel assistance in connection with the analysis of products of combustion from other fuels. However we understand that boiler plants at Fort ——— which are the largest single users of bituminous coal are already equipped with modern continuous flue analysers and draft instruments. The other principal use for coal is in Mess Kitchen ranges where flue gas analyses will prove of little or no value.

Respectfully submitted,

INDUSTRIAL DIVISION

Personnel Service

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Executive-Engineer—Technically trained; widely experienced in: Production, transmission and distribution of natural, mixed and manufactured gas; electrical generation, transmission and distribution; design, construction and maintenance; purchasing, traffic, and sales engineering wishes to join progressive organization where merit, results and profits are foremost. **1474.**

15 years' broad experience manufacturing gas—specialized in low pressure and high pressure transmission and distribution—Inventory—appraisal—accident prevention—now active duty U. S. Navy—Commander U.S.N.R. Long range planning to future **Post War connection** medium size property—location immaterial—Married with family. (43) **1475.**

Manager-Engineer. Young man with 15 years' experience in the design, engineering, operation and management of medium sized gas properties desires to make change. Experienced in butane-air, propane, natural and carbureted water gas. Draft exempt and can secure release from present employer. Further information gladly furnished. (35) **1476.**

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